PB-234 068

KANSAS CITY'S MUNICIPAL SOLID WASTE MANAGEMENT SYSTEM. A CASE STUDY

Applied Management Sciences, Incorporated

Prepared for:

Environmental Protection Agency

1973

DISTRIBUTED BY:

NTIS
National Technical Information Service
U. S. DEPARTMENT OF COMMERCE
5285 Port Royal Road, Springfield Va. 22151

BIBLIOGRAPHIC DATA SHEET

1. Report No. EPA/530/SW-72c

2.

PB 234 068

4. Title and Subtitle

Kansas City's Municipal Solid Waste Management System:
A Case Study

5. Report Date 1973

6.

7. Author(s)

8. Performing Organization Rept. No.

9. Performing Organization Name and Address

Applied Management Sciences
962 Wayne Avenue
Silver Spring, Maryland

10. Project/Task/Work Unit No.

11. Contract/Grant No. 68-03-0041

12. Sponsoring Organization Name and Address

U. S. Environmental Protection Agency
Office of Solid Waste Management Programs
Washington, D. C. 20460

13. Type of Report & Period Covered final

14.

15. Supplementary Notes

16. Abstracts

This study examines solid waste collection and disposal in Kansas City, Missouri. The background of the system, including location, geography, demography, climate, form of government, and the solid waste management agencies is described, and the characteristics of the system, including the services, equipment, and finances are discussed.

17. Key Words and Document Analysis. 17a. Descriptors

Waste disposal, urban areas

17b. Identifiers/Open-Ended Terms

Reproduced by
NATIONAL TECHNICAL
INFORMATION SERVICE
U S Department of Commerce
Springfield VA 22151

17c. COSATI Field/Group

18. Availability Statement

19. Security Class (This Report) UNCLASSIFIED

20. Security Class (This Page) UNCLASSIFIED

21. No. of Pages 257

22. Price $16.00

FORM NTIS-35 (REV. 3-72)

USCOMM-DC 14952-P72

AS NOTED IN THE NTIS ANNOUNCEMENT, PORTIONS OF THIS REPORT ARE NOT LEGIBLE. HOWEVER, IT IS THE BEST REPRODUCTION AVAILABLE FROM THE COPY FURNISHED NTIS BY THE CONTRIBUTOR.

Direct questions resulting from illegibility to:

Systems Management Division
Office of Solid Waste
1835 K Street, N.W.
Washington, D. C. 20460

201002

KANSAS CITY'S MUNICIPAL SOLID WASTE MANAGEMENT SYSTEM

A Case Study

This final report (SW-72c) describes work performed
for the Federal solid waste management programs
under contract no. 68-03-0041
to APPLIED MANAGEMENT SCIENCES, INC.
and is reproduced as received from the contractor

U.S. ENVIRONMENTAL PROTECTION AGENCY

1974

ib

This report has been reviewed by the U.S. Environmental Protection Agency and approved for publication. Approval does not signify that the contents necessarily reflect the views and policies of the U.S. Environmental Protection Agency, nor does mention of commercial products constitute endorsement or recommendation for use by the U.S. Government.

An environmental protection publication (SW-72c)
in the solid waste management series

FOREWORD

Solid waste management systems are an integral part of the environment of nearly every citizen in the United States. Yet until recent years, these systems have not received the attention other visible residential services have enjoyed. This historical neglect has resulted in systems which may not be cost-effective, especially with respect to the rising cost trends encountered in solid waste management activities. These trends arise from two principal factors:

* Environmentally sound disposal methodology is being enforced or strongly encouraged; as a result, disposal sites and needed equipment are now expensive to procure and operate.

* The collection function is highly labor intensive. Thus, the costs of unskilled labor, which have been rising to meet socioeconomic demands, have had enormous impacts on local agency budgets.

This rise in cost pressure has forced all levels of governmental organizations to consider more closely the management and costs of solid waste management activities.

Because efforts to upgrade solid waste management practices are in their infancy, there is still an obvious lack of data bases for evaluative and comparative analyses. This case study is one in a series of case studies of solid waste management systems which has been conducted under the sponsorship of the Office of Solid Waste Management Programs, U. S. Environmental Protection Agency. Kenneth Shuster and Cindy McLaren served as EPA project officers on the case study reported herein. The purpose of these case studies is to fill in this data gap with actual case histories of how cities are handling their solid waste problems.

Concerned agencies at all government levels, as well as private firms, will be able to assess information of the following types:

* The management and operating characteristics of public sector solid waste management systems.

* The institutional forces which give rise to these characteristics.

- Those techniques that have been or are being applied to enhance the measures of productivity, aesthetics, level of service, and environmental control.

These agencies and firms can then use these comparisons to upgrade their systems according to the norms achieved in other cities of similar size, geographical location, and operational and institutional characteristics.

--ARSEN J. DARNAY
Deputy Assistant Administrator
for Solid Waste Management
Office of Solid Waste Management Programs

TABLE OF CONTENTS

Chapter Page

1 INTRODUCTION 1

2 SYSTEM DESCRIPTION ABSTRACT 5

3 FINDINGS AND CONCLUSIONS 9

4 BACKGROUND OF THE SYSTEM 13

- 4.1: Location, Demography, Economic Base, and Climate 13
- 4.2: Form of Government and Organization 15
- 4.3: Solid Waste Management History 21
- 4.4: Agencies Impacting the Solid Waste Management System 28

5 SOLID WASTE SYSTEM CHARACTERISTICS 39

- 5.1: Collection Responsibilities of the Refuse Division 41
- 5.2: Quality of Service 65
- 5.3: Labor-Management Relations 66
- 5.4: Inner City 71
- 5.5: Disposal Methods 71
- 5.6: Equipment Description 77
- 5.7: Financial Reports of the Kansas City Solid Waste Management System 81

APPENDIX A-1: State Act for Regulation of Solid Waste Services 92

A-2 State Guidelines for Review of MARC Area Comprehensive Solid Waste Management Plans . 99

B: City Council Resolution Postponing Expansion of Municipal Farm Landfill Site 104

C: Employee Performance Report Form 106

D: Homes Associations Costs and Sample Contract 108

E: City Code and Regulations for Residential Refuse Collection 113

F: Specifications for Polyethylene Refuse Bags.148

G: Private Contractor Specifications and Contract Documents for Refuse Collection Routes 158

TABLE OF CONTENTS (Cont'd.)

Page

APPENDIX H: Private Contractor Bid Data for 1971, 1972, and 1973 City Contracts 212

I: Missed Collection Call Data 217

J: Refuse Program Survey Response Summary . 219

K: Computation of Kansas City Waste Generation Projections 222

L: Supplemental Budget for Solid Waste Management System, Kansas City, Mo., 1973-74. . 242

M: Expenditures for Street Cleaning Under Lease Agreement Kansas City, Mo., October 1, 1972 to April 30, 1973 245

LIST OF ILLUSTRATIONS

Figure | Title | Page

1 Data Sources and Information Types 3
2 Kansas City Government 17
3 Organization of the Department of Public Works . . 18
4 Present Organization - Refuse Division 20
5 Little Blue River Flood Plain Area 34
6 City Boundaries, City Collection Area, and Landfill Sites 43
7 City Collection District 44
8 Refuse Division Organization 46
9 Special Clean Up Flyer 49
10 Bulky Item Collection 59
11 Disposal Site Location for City Operations 73

LIST OF TABLES

Figure | Title | Page

1 Collection Abstract 7
2 Disposal Abstract 8
3 City Area - Number of Dwelling Units By District by Day 45
4 Manpower and Equipment Allocations - Collection Function 52
5 Efficiency and Productivity Data for Kansas City . 54
6 Summary of Private Hauler Stops and Costs 64
7 Employee Benefits 68
8 Tenure Data (Refuse Division) 70
9 Solid Waste Disposal Summary for FY '72-'73 . . . 74
10 Summary of Total Waste Generation Projections for Kansas City (Tons) 76
11 Collection Fleet Description and Operating Costs . 78
12 General Fund Account and Revenue Sources for Solid Waste Management System, Kansas City, Mo., 1968-69 to 1973-74 83

LIST OF TABLES (Cont'd.)

Table	Title	Page
13	Expenditures for Refuse Collection and Disposal Kansas City, Missouri - 1968-69 to 1973-74	86
14	Direct Expenditures for Refuse Collection and Disposal by Object Category, Kansas City, Mo., 1971-72 to 1973-74	88
15	Direct Expenditures for Refuse Collection Attributable to Private Contract Operations, Kansas City, Mo., 1972-73 and 1973-74	89
16	Direct Expenditures for Refuse Collection Attributable to City Collection Operations, Kansas City, Mo., 1972-73 and 1973-74	89
17	Expenditures for Street Cleaning Kansas City, Mo., 1968-69 to 1973-74	91

1

INTRODUCTION

The solid waste management system of Kansas City, Missouri, has had its structure radically altered since 1955 as a result of environmental statutes, public sector leadership, and private citizen participation. The collection function has transitioned from a wholly private sector garbage only operation (under contract to the city) through a public and private sector operation in which the city collected garbage and private haulers collected trash, to the current mix of public sector and private sector combined refuse collection (under contract to the city) operation. Labor-management negotiations have resulted in upgrading the city collection force's wages, fringe package and other benefits.

The most visible and historically recent issues have related to the disposal function. After extended disputes with a citizen organization, the city agreed to both suspend plans to open a new landfill site and to raise capital for a new disposal system by means of a bond referendum during a city charter revision election. Passed on August 8, 1972, the 8.45 million dollar issue provides for land and facility acquisition once the various factions resolve the issue of site selection. Resident objections to site locations, structural problems of landfilling above mined areas used for storage, need for engineering/economic site evaluations, problems of locating sites in or near flood plains, and political impasses are some of the factors complicating the site selection issue.

EPA and HUD have recently had some influence on the evolution of the Kansas City region's solid waste disposal system. By supporting the design and operation of a model landfill in Kansas City, Kansas and by involvement in the passage of the Kansas City, Missouri bond issue for a solid waste disposal system, these agencies have helped to pay the groundwork for improved landfill site selection and operation.

A recently passed Missouri state law, requiring counties to develop comprehensive solid waste management plans, will also have impact on the evolution of a regional approach to solid waste disposal. Kansas City must now coordinate its disposal function planning with the three counties in which it lies and with the Mid-America Regional Council, which has the power of final approval of the county plans.

The case study of Kansas City, Missouri was performed using a carefully structured interview technique. Initial contacts were made by both the Office of Solid Waste Management Programs and Applied Management Sciences' personnel, and interviews were scheduled at the convenience of the city personnel. The study team also interviewed EPA Regional Office personnel. During these interviews, notes were taken and tape recordings were made after obtaining permission from the interviewees. Extensive efforts were made to require a minimum of city personnel time and whenever possible, existing documentation was solicited to support the general discussions. Figure 1 presents the titles of the people interviewed in Kansas City, the dates of these interviews, and the types of information obtained.

Titles	Date	Information Type
EPA Regional Office - Region 7 - Director of Division of Hazardous Materials Control - Chief, Solid Waste Management Branch - Staff Engineer	30 July	Background information on Kansas City Solid Waste System
Director, Department of Public Works	30 July	Historical data and current operating characteristics of system
Operations Engineer	30, 31 July	Overview of System Operations, details of Disposal Bond Issue, Details of Plastic Bag Experiment and Contractor Data
Chief, Solid Waste (Refuse Division)	30, 31 July	Detailed information on collection and disposal systems operations
K.C. Public Information Office and Chamber of Commerce	30 July	Background data on city and impacts on solid waste system
Finance Department Representative	30 July	System financial data
AFSCME Local No. 500 President	31 July	Discussion of union characteristics and issues
Administration Officer (Refuse Division)	31 July	Data descriptive of system operation
Jackson County Representative Department of Public Works	31 July	Discussion of county activities regarding solid waste planning
Mid-America Regional Council Director of Engineering	31 July	Discussion of MARC landfill and regional solid waste planning efforts
Superintendent of Street Maintenance	31 July	Data on street sweeping operations
Refuse Division Disposal Superintendent	1 Aug	Disposal site inspection and general information
Eastwood Hills Homeowners Association, President	1 Aug	Discussion of disposal site issues and passage of disposal bonds
Citizens' Environmental Council President	1 Aug	Discussion of city solid waste issues and C.E.C. programs

FIGURE 1: DATA SOURCES AND INFORMATION TYPES

This report consists of five chapters, including the introduction. Chapter 2 is a systems description abstract which synopsizes the characteristics of the city and the collection and disposal systems. Chapter 3 presents the findings of the case study effort and identifies potential problem areas. Chapter 4 is a description of the city in terms of those parameters which can affect solid waste management operations. Finally, Chapter 5 reports the characteristics of the solid waste system in considerable detail. All aspects of the system are discussed and appropriate tabular data are presented.

2

SYSTEM DESCRIPTION ABSTRACT

City: Kansas City, Missouri

Contacts:

EPA Regional Office - Region 7:

Donald A. Townley	Director, Division of Hazardous Materials Control
Morris Tucker	Chief, Solid Waste Management Branch
Thomas D. Gillard	Staff Engineer

Myron Calkins	Director, Department of Public Works
Al Beck	Operations Engineer
Joseph F. Reichert	Refuse Division: Chief
James Vaughn	Representative, K.C. Finance Department
Jerry Morris	Administrative Officer, Solid Waste - Refuse Division
George Handy	Jackson County, Missouri: Representative of Department of Public Works
Gerald Neely	Director of Engineering, Mid-America Regional Coundil (MARC)
Mr. Carpenter	Superintendent of Street Maintenance
Willard Winsor	Area Superintendent for Disposal Operations
Larry Fern	Eastwood Hills Homes Association, President

Mrs. Nell Howell	Citizen's Environmental Council Representative
Donald Rice	AFSCME Local No. 500, President

Date of Visit: July 30 - August 1, 1973

Population Demography:

Date	Total	White	Other
1972	513,837	-	-
1970	507,087	391,471	115,616
1960	475,539	-	-
1950	456,622	-	-

S.M.S.A. Racial Distribution:
87.4% White
12.05% Negro
0.55% Other

Area: 316.3 square miles

Density: 1603 people per square mile

Housing Units (all year round): 192,284 (176,000 occupied units)

Mileage: 1,980 miles of streets

Collection: Table 1

Miscellaneous: The Refuse Division is responsible for all residential collection services except for street sweeping, which is the responsibility of the Street Maintenance Division. No commercial collections or stops with more than 6 dwelling units are made by city or city-supported forces. Private contractors collect about 50% of the volume and bid annually for their routes. The city uses a shuttle system and plastic bags are used city-wide to enhance collection efficiency. The city will soon be evaluating one-man trucks, as most of their fleet requires replacement.

TABLE 1

COLLECTION ABSTRACT

Collection Variables \ Collection Function	Mixed Refuse (City)	Mixed Refuse (Contractors)	Bulky Items (City)	Animals (City)	Mechanical Sweeping	Hand Sweeping
Number of Routes	4 daily zones - 26 crews	25	4 zones	NA	26	-
Crew Size	3	NA	2	1	1 to 3	12
Frequency of Service	1/week	1/week	on request	on request	1/week or 10 times a year.	
Point of Collection	curbside or backyard	curbside or backyard	curbside	curbside	roadway	roadway
Method of Collection	Plastic bags mandantory	Plastic bags mandantory	Flatbed trucks	Pickup trucks with hoists	Mechanical sweeper Vacuum Flusher	Nothing specified
Stops	66,456/week	68,800/week	15,000/year	8000 animals/yr.	2700 curb-miles	-
Service Limitations	Unlimited no. of plastic bags less than 65 lbs. in weight. No stops with more than 6 units.		No building or construction materials, dirt, rock, or auto parts	No very large animals collected	None	None
Incentive System	Area Based Task Incentive System					
Fund Source 1/	General Fund					
Tonnage (annual)	86,439	78,156	1,900	-	35,000 cubic yds.	
Wage Scale (hourly)	$3.01 - $3.50	-	$3.01 - $3.50	$3.01 - $3.50	$3.01 - $3.50	
Unions	AFSCME	-	AFSCME	AFSCME	AFSCME	
Annual Cost 2/	$4,734,395				NA	
Comments	Bags supplied by city. Aging fleet with high maintenance costs	Bags supplied by city.		-	Repeatedly not meeting schedule and of low priority. Supported by Revenue Sharing and EEA funds.	

1/ Earnings tax percentage increase committed to support of increased services in 1971. Also, Bond Issue passed to support eventual new disposal system. Contractors paid by city based on their bid rates per stop.

2/ Some Revenue Sharing funds support collection operations. Contractor costs are approximately $1,134,697 for FY '73-74.

Disposal: Table 2

Miscellaneous: The Refuse Division operates the one remaining city site and is seeking new sites, backed by an 8.5 million dollar bond issue for a new disposal system. Two other sites, one in Kansas City, Kansas, and one private site in the southeast sector of the city are used. EPA Regional Office has taken strong interest in the region's disposal system planning and evolution. City-site operation is now limited to acceptance of only city-collected wastes to stretch life of the city landfill.

TABLE 2
DISPOSAL ABSTRACT

Disposal Site / Disposal Data	New Chouteau Landfill	MARC Demonstration Landfill	WOLF (SE Fill)
Type	Public Site	Public Site	Private Site
Capacity	45,000 tons	N/A	N/A
Real Loading	1400-1700 tons/week[1]	0-50 tons/mo.[3]	750-1000 tons/mo.[3]
Expected Lifetime	6 months	1½ years	5 years
Operating Costs to City (not including Department service)	$263,908 [2]	Fees on tonnage basis	Fees on tonnage basis
Start-up Costs	$135,000	--	--
Location	Near Missouri River in K.C., Missouri	Kansas City, Ks.	South-East section of city

[1] Receives wastes from all city collection operations, including street sweepings, trees and brush, grit, etc. Refuse Division deposits from 1,100 to 1,300 tons per week of tons per week of this loading.

[2] This figure is gross operating cost and does not take into account landfill fees (estimated $73,000 for FY 1973-74) or EEA support of $4,063. Net cost is estimated at $159,360 for FY 1973-74.

[3] Represents waste hauled to these sites by Refuse Division only.

3

FINDINGS AND CONCLUSIONS

The solid waste management system of Kansas City has several interesting characteristics. First, is the nature of the service operation. Collection occurs on a four-day, ten-hour basis for city forces. Second, the outer, less dense areas are collected by private sector contractors who bid for these routes on an annual basis. Third, to improve system efficiency, the city operation has gone to mandatory use of plastic bags for refuse storage, resulting in a high rate of voluntary citizen curbside setout. Fourth, the city uses a shuttle system in which full trucks are driven to the landfills and crews continue to work with other trucks in the collection zone. Crew time is thus optimized. Also a large extra-board labor pool is utilized to provide for absentee replacement and to minimize direct labor expenses, as city forces are paid time-and-a-half for overtime.

Passage in 1968 of local laws banning open burning and of state laws in 1954-55 prohibiting collection of wet, uncooked refuse for livestock feeding have greatly impacted the evolution of the system. A state law passed in 1972 requiring the creation of county solid waste management plans is stimulating the current search for acceptable solid waste disposal sites.

Lack of acceptable disposal sites, lack of sufficient cover material, and strong citizen reaction to their initial exclusion from city disposal system planning are factors which have contributed to the current problems of disposal site selection. Two of the three city landfills have recently been closed as they were filled to capacity: no replacement sites have yet been opened. The need for economical disposal sites, the need for for a state plan, and the recently passed 8.45 million dollar disposal system bond issue are pressures which will eventually force solution of this issue.

The city sanitation administration is well-staffed with highly professional personnel. A large amount of detailed operational data is kept on a weekly basis. Management is intimately involved in committee efforts for disposal system planning and has undertaken detailed alternative systems comparisons and solid waste generation projections. Coordination is maintained with the regional council of governments (MARC) regarding planning efforts. In effect, Kansas City has one of the most closely managed systems of the cities studied.

The city is under strong pressure to continuously improve system efficiency, as the system costs are high.[1/] The use of plastic bags, the 4-10 workweek, the extra-board labor pool, and the evaluation of one-man packer vehicles are some of the major aspects of the city's efforts to improve efficiency. Also, the use of contractors for residential collection provides both flexibility and pressure for improvement of city collection efficiency. The city has taken an innovative stance towards the solution of its problems.

[1/] System costs include provision of plastic bags, collection and disposal operations, and an overhead burden. Thus, while costs are relatively high, level of service and burden must be considered.

The relatively close working relationship between the city and the union enhances the city's ability to implement change. Wages are competitive, time-and-a-half is paid for overtime (an exception to the rule in Kansas City), labor demands generally have been met, and the fringe package is comprehensive. It is expected that the city will soon move to adopt an ordinance permitting it to enter into a contract with the union.

From a financial perspective, Kansas City is one of the few cities where solid waste activities are financed rather directly from an earnings tax. Based on the city's commitment to improve the level of service of refuse collection, a tax increase was passed as part of an overall package of increased city services and that commitment has been met. The city now picks up mixed refuse and bulky wastes from all residential dwellings containing six or less dwelling units and, on a quarterly basis, provides plastic bags for refuse storage. The major problem with bags appears to be attack from domestic animals, and too few bags for higher waste generation stops. The cost of the total system is not inexpensive. Collection costs per ton appear very high compared to other sites studied: however, this situation is apparently linked to a relatively large administration force, low waste generation per dwelling unit, high equipment maintenance costs, the cost of plastic bags (purchase, storage, delivery) and, a general overhead burden billed against the system operation by the city. However, citizen satisfaction is high, complaints are quickly handled and the labor force is stable.

Major future problems are the need to locate acceptable and economically feasible disposals sites and the need to develop a solid waste management plan acceptable to MARC, the three contiguous counties and the state. If the city opts to purchase one-man trucks, the labor force will have to be adjusted and an unfavorable union reaction is likely to occur. However, rising labor costs and the acceptance of plastic bags and curbside collection make such an option attractive. Disposal site selection and solid waste management plan development are two sides of the same coin. Both sets of issues will have to be simultaneously resolved, a difficult task given the current political situation with respect to citizen involvement and disposal site contraints.

Solid waste management activities in Kansas City are successful because of the innovative and open-minded positions taken by both management and labor. Innovative programs are implemented because management takes care to plan its approach carefully and to provide incentives for the acceptance of new methods. Labor is generally cooperative and willing to listen and negotiate. Citizen reaction has resulted in inclusion of interested citizens in the disposal system planning process. The private sector has been responsibe to contracting opportunities and the bid cost per stop has decreased each year since contract service was initiated in 1971. While some difficulties are clearly facing the system, it is also evident that the able and aggressive management will be capable of resolving the issues and servicing the city.

4

BACKGROUND OF THE SYSTEM

Incorporated in 1850 as the Town of Kansas by the Jackson County Court, the City of Kansas City, Missouri, today is the second most populous city in the state. Kansas City lies within the boundaries of three counties; Jackson, Clay and Platte, and is located on the western boundary of the state at the junction of the Kansas and Missouri Rivers, 140 miles south of the Iowa-Missouri border. The Kansas City Standard Metropolitan Statistical Area (SMSA) consists of six counties, four in Missouri (Platte, Clay, Jackson and Cass) and two in Kansas (Johnson and Wyandotte). This region had a total 1970 population of 1,291,900. Often referred to as the "Heart of America", Kansas City is within 250 miles of the geographic center of the U.S. and also the center of population.

4.1: Location, Demography, Economic Base, and Climate

Kansas City, Missouri, largest city of the Greater Kansas City Area, and covering 316 square miles, is situated on the western border of Missouri Rivers -- 94 degrees 35' west longitude, 39 degrees 08' north latitude. Topographic variations range from a minimum elevation of 745 feet along the river-floor plain to a maximum elevation of 1005 feet. The rivers are a prominent topographic feature with the greatest variation in topography occurring adjacent to the flood plains. Consolidated rock occurs at shallow depths throughout the region, limiting the amount of cover materials available for landfill operations. There are more than 3,740 acres of parkland in the city, connected by a 150-mile park drive and boulevard system. The Country Club district, in the southern part of the city, has gained international attention as a model for city planning.

Kansas City, Missouri, is the twenty-sixth largest city in the United States. The SMSA population is projected to reach 1,324,000 by the end of 1973. Kansas City's 1972 population was estimated at 513,887, up 38,000 from 1960 and 57,000 from 1950. Total SMSA employment was 596,000 as of the spring of 1973, with the rate of unemployment remaining in the 4.5 percent to 4.8 percent range. Approximately 86 percent of the city's population lives in the Jackson County portion of the city. Household median income is $9,165 and the racial distribution for the SMSA is 87 percent white, 13 percent black and other races.

The Kansas City SMSA has a net effective buying income of $5,233,652,000. Fifty-seven percent of the households have an income greater than $8,000 per year. For the seven county region, the 1990 population is projected to be almost three million, up 1.7 million from the 1970 population level. Approximately one-half of the region's 1970 population resided in Jackson County, Missouri.

The primary source of public revenues for Kansas City is the real estate tax. This revenue is used to finance the city and county government operations and the operations of respective school districts. Kansas City also has a 1 percent earnings tax based on gross income. A proposed increase in this earnings tax, from ½ to 1 percent, was considered and passed in 1970 and, as part of the total new revenues generated, it served as a means of financing an expanded and combined refuse collection service, including the use of plastic storage bags supplied by the city at a rate of ten bags per residence per month.

Within the region, the seven counties (including Leavenworth County, Kansas) contain thirty cities with populations greater than 2,500. Of the total region, less than one-third (or 920 square miles) is expected to be urbanized by 1990. As of 1971, twenty-one land disposal sites, not including the EPA-sponsored MARC demonstration landfill, served the region. In addition to contributing to a shortage of cover material, the presence of bedrock at shallow depths impedes the downward flow of groundwater, causing lateral water travel. The Kansas City landfill lies in the Blue River flood plain behind a levee and is a possible water pollution problem, as the Kansas and Missouri Rivers are the major water supply sources for the region.

The Kansas City area is subject to the wide seasonal temperature variations common to the midwestern plains. The mean annual temperature is 56.8^{o} F, July is the warmest month with a mean temperature of 81.5^{o} F, and January is the coldest with a mean temperature of 31.7^{o} F. The average annual rainfall is 34.07 inches, June being the wettest month. Regional climatologic and topographic conditions are favorable for pollutant dispersion in the atmosphere. Photochemical smog has not yet been prevalent in the metropolitan area. Particulate matter has been the major atmospheric pollutant.

4.2: Form of Government and Organization

4.2.1: Form of Government

The government of Kansas City is considered a "home rule" type of government under the Missouri constitution. That is, it has framed and adopted a home rule charter rather than operating directly under state law adopted by the state legislature for various classes of cities. Kansas City has had three charters for home rule; adopted in 1889, 1908 and 1925. The 1925 home rule charter established the "council-manager" form of government under which Kansas City now operates.

The powers of administration are vested in the City Council, composed of a mayor, elected at large, and twelve councilmen. All are elected for four-year terms. Six councilmen are elected from districts and six are elected by all the voters (each of the councilmen-at-large must come from one of the six districts).

The mayor has all the powers and duties of a councilman and is president of the Council. He is the official head of city government and serves as city spokesman and host. He appoints members to advisory boards and commissions, is an ex-officio member of the Board of Police Commissioners, signs all Council ordinances and authorized contracts and bonds.

The current home rule charter, Sections 20, 21 and 22, set forth the conditions, qualifications, salary, responsibility, and duties of the city manager. He is the professional chief administrative officer who serves at the pleasure of the Council, appoints department directors, and supervises the administrative affairs of the city's operation. Under the charter, the Council also appoints the City Clerk and the City Auditor.

4.2.2: Organization

Figure 2 depicts the organizational structure of the Kansas City government. The administration of the city's solid waste management system is the responsibility of the Public Works Department, one of the largest segments (over 800 employees) of the city government. In addition to the solid waste system, the Public Works Department is responsible for a broad range of services and functions.

Figure 3 presents the organization of the Department of Public Works. The Department consists of four major divisions, each having its own area of responsibility. Solid waste collection and disposal functions for residential and some commercial clients are the responsiblity of the Refuse Division, directed

Reproduced from
best available copy.

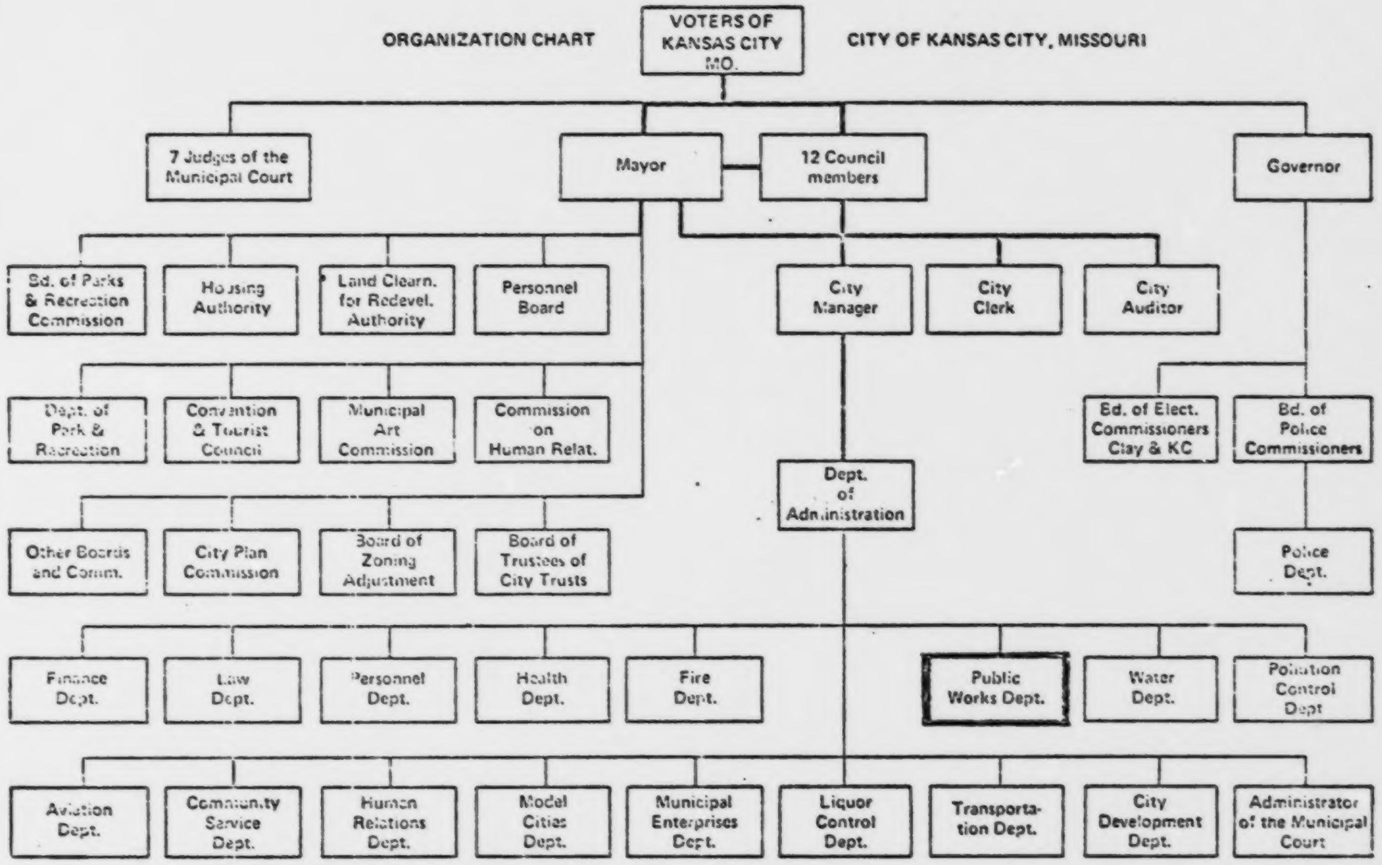

ORGANIZATION CHART
CITY OF KANSAS CITY, MISSOURI
VOTERS OF KANSAS CITY MO.
7 Judges of the Municipal Court
Mayor
12 Council members
Governor
Bd. of Parks & Recreation Commission
Housing Authority
Land Clearn. for Redevel. Authority
Personnel Board
City Manager
City Clerk
City Auditor
Dept. of Park & Recreation
Convention & Tourist Council
Municipal Art Commission
Commission on Human Relat.
Bd. of Elect. Commissioners Clay & KC
Bd. of Police Commissioners
Dept. of Administration
Other Boards and Comm.
City Plan Commission
Board of Zoning Adjustment
Board of Trustees of City Trusts
Police Dept.
Finance Dept.
Law Dept.
Personnel Dept.
Health Dept.
Fire Dept.
Public Works Dept.
Water Dept.
Pollution Control Dept
Aviation Dept.
Community Service Dept.
Human Relations Dept.
Model Cities Dept.
Municipal Enterprises Dept.
Liquor Control Dept.
Transportation Dept.
City Development Dept.
Administrator of the Municipal Court

FIGURE 2: KANSAS CITY GOVERNMENT

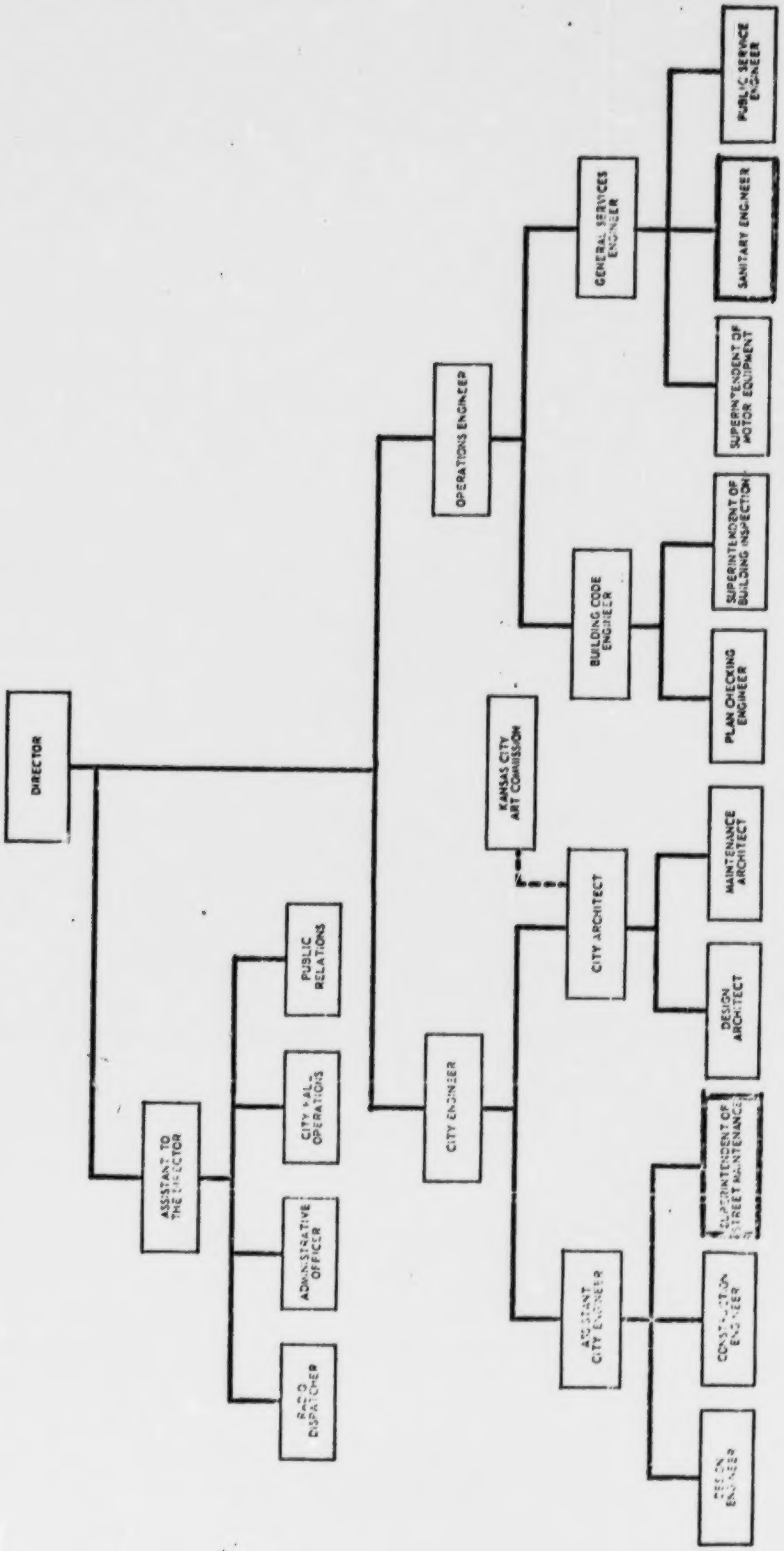

DIRECTOR
ASSISTANT TO THE DIRECTOR
RADIO DISPATCHER
ADMINISTRATIVE OFFICER
CITY HALL OPERATIONS
PUBLIC RELATIONS
CITY ENGINEER
ASSISTANT CITY ENGINEER
DESIGN ENGINEER
CONSTRUCTION ENGINEER
SUPERINTENDENT OF STREET MAINTENANCE
CITY ARCHITECT
KANSAS CITY ART COMMISSION
DESIGN ARCHITECT
MAINTENANCE ARCHITECT
OPERATIONS ENGINEER
BUILDING CODE ENGINEER
PLAN CHECKING ENGINEER
SUPERINTENDENT OF BUILDING INSPECTION
GENERAL SERVICES ENGINEER
SUPERINTENDENT OF MOTOR EQUIPMENT
SANITARY ENGINEER
PUBLIC SERVICE ENGINEER

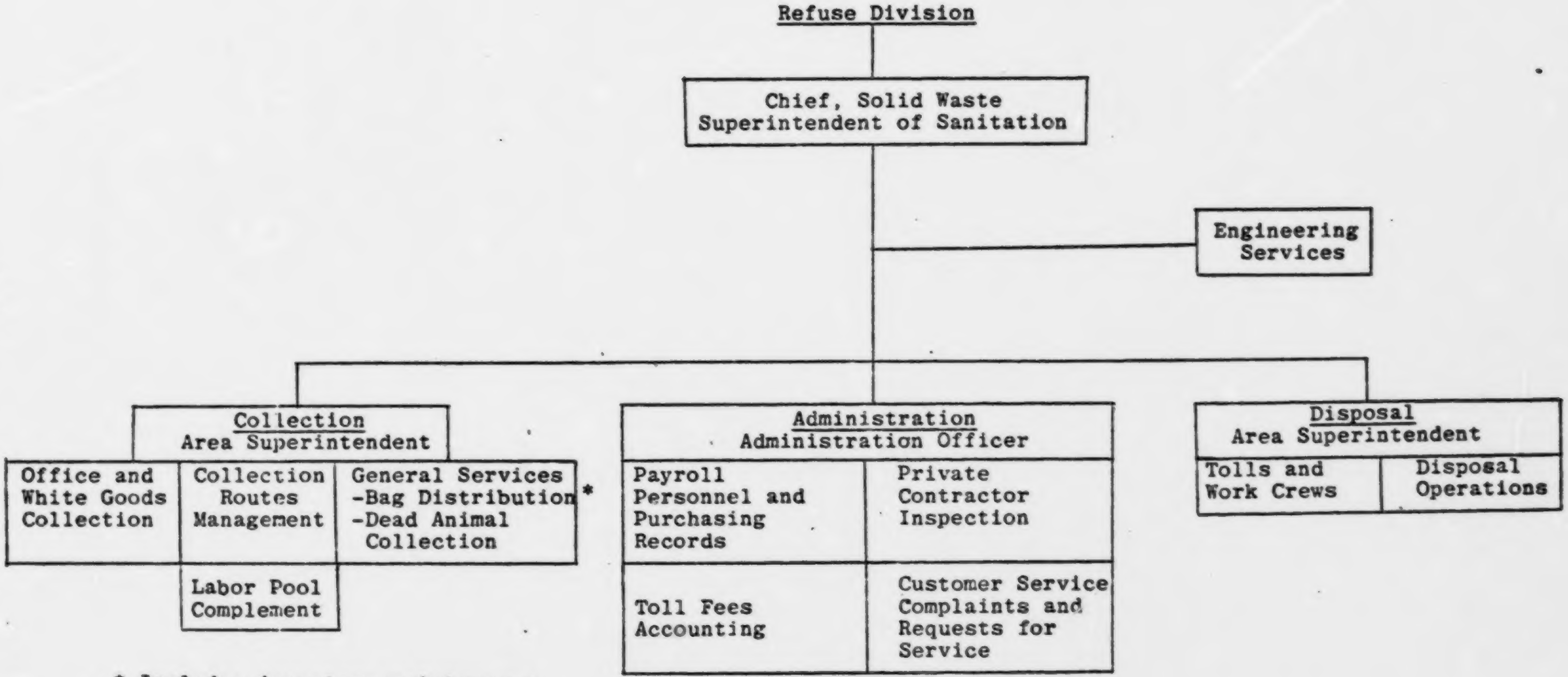
FIGURE 3: ORGANIZATION OF THE DEPARTMENT OF PUBLIC WORKS

by a sanitary engineer who serves as Chief of Solid Waste Services. Street cleaning is the responsibility of the Superintendent of Street Maintenance, and is located in another division. The Refuse Division's chief reports to the Operations Engineer, who is also responsible for enforcement of building codes, dangerous building removal, motorized equipment maintenance, and street lighting design and maintenance.

It should be noted that the Department of Public Works maintains relatively extensive data collection activities to monitor its solid waste functions. While not automated except for financial statements, the data are apparently quite accurate and up-to-date.

The organization chart of the Refuse Division is presented in Figure 4. It should be noted that the Administration branch is a relatively large group but is responsible for its own payroll/personnel/purchasing records, for receipt of customer complaints for both city and private contractor collection functions, and for inspection of private contract operations. This branch provides the excellent data acquisition and analysis services to the division.

The collection branch maintains its own office operations and manages the city's collection operations for mixed refuse, bulky items, and dead animals. It is also responsible for the distribution of plastic bags to all city residents for refuse storage. The only exclusion are those residential associations which contract directly with private haulers for higher levels of service. The associations are reimbursed by the city for the estimated costs to be incurred if the city or one of its contractors were to collect their refuse. The reimbursement contracts are administered by the Refuse Division. A labor pool is available to this branch for extra personnel as needed.


Refuse Division
Chief, Solid Waste
Superintendent of Sanitation
Engineering Services
Collection
Area Superintendent
Office and White Goods Collection
Collection Routes Management
General Services
-Bag Distribution*
-Dead Animal Collection
Labor Pool Complement
Administration
Administration Officer
Payroll
Personnel and Purchasing Records
Private Contractor Inspection
Toll Fees Accounting
Customer Service Complaints and Requests for Service
Disposal
Area Superintendent
Tolls and Work Crews
Disposal Operations

* Includes inventory maintenance, warehousing and bag distribution

FIGURE 4: PRESENT ORGANIZATION - REFUSE DIVISION

The disposal branch is responsible for the operations of the city-owned landfill.

4.3: Solid Waste Management History

Prior to 1955, all residential garbage was collected by private haulers on a city-hauler contract basis. In 1955, the city bought thirty-five, thirteen-yard packer trucks and ran them for thirteen years with the original chassis and packer bodies. They were replaced in 1967 with the current fleet. The city's entry into separate garbage collection in 1955 resulted from a state law which required that garbage used for hog feeding be cooked. The private contractor wouldn't do this. Also, the city charter was modified and the contract period for garbage collection was reduced from ten years to an annual basis.

Since 1964, the city's solid waste management system has undergone extensive operational modification. In 1964, the city manager appointed a new Director of Public Works and, in 1965 a new Operations Engineer was appointed. Solid waste systems improvement was one of their major objectives. In 1964, the city collected only "wet" garbage on a once a week basis. Household storage was in cans either at ground level or in sunken pits. Trash was privately collected on an individual homeowner-contractor basis and was stored in 55 gallon steel barrels. Open dumping was the disposal technique and burning refuse was quite common. The dumps were covered on an irregular basis and cover material was in short supply. Backyard burning of both wet garbage and trash was commonplace. Also, the city had maintained a practice of collecting commercial garbage stops on a daily basis. Flatbed trucks were used to pick up full 35-gallon barrels and replace them with empties. This operation was stopped by the Department of Public Works in July of 1970 and no commerical stops have been collected since that date.

The first stage of transition began in July 1968 when the City council imposed a ban on open burning both at the dumps and in backyards. The Department of Public Works had to bring the three city-operated landfills into compliance. Fund shortages and lack of readily available cover material for the site then operated were the major problems. Over the next two years, the city operated two interim (short life) sites and continued the operation at one long term site. The interim sites were completed and closed between May 1972 and August 1973. The long term site is expected to reach capacity by the spring of 1974. All of these efforts were financed from the General Fund.

In December 1970, the City Council passed an Ordinance to increase the local earnings tax from its current level of ½ percent to 1 percent of taxable income (wages and salaries). This step represented the second stage of transition in that a portion of the incremental funds of the tax increase were earmarked to provide for a combined refuse and trash collection service, with disposal bags to be supplied to the residences by the city at a rate of ten bags per month. The earnings tax increase was actually an alternative funding mechanism to a service charge of $2.50 per residence per month passed by the Council in 1969 but rescinded shortly after passage. The service charge proposition was delayed and later rescinded when the voters turned down a December 1969 Bond Proposal package that would have resulted in a general tax increase (proposition called for a tax increase and issuance of bonds).

On March 1, 1971 the city began its combined collection service on a dual basis: part of the stops (approximately half) were to be collected by the city crews and part of the stops were to be collected by the private sector under contract to the city. Also, a number of areas were organized as homes' associations which contracted directly with the private haulers for refuse collection and received rebates from the city for the city's estimate of the cost of their service. The city had defined routes to be serviced by one truck on a weekly basis and had advertised for bids. Nineteen such routes were established and private haulers could submit bids for any set of routes they wished to service. Contractors were and are now required to pay disposal fees to the city if they use city disposal sites.

As an aside, the Metropolitan Planning Commission of the Kansas City Region (Metroplan) undertook a study to develop a regional solid waste plan, using services from the Aerojet General Corporation and Black and Veatch Consulting Engineers. The study was published in May, 1971 and was sponsored by a Federal grant received in March, 1968 from the U.S. Public Health Service under Section 206 of the 1965 Solid Waste Disposal Act. The city's Department of Public Works actively participated in the study effort as part of a Technical Advisory Committee on Solid Waste. The study recommended new ordinances, planning requirements, and an "optimal" regional solid waste system. To the extent ascertainable, few if any of the study recommendations have been implemented. Metroplan's successor organization, the Mid-America Regional Council (MARC) has received HUD and EPA funds for a demonstration model landfill located in Kansas City, Kansas.

Upon initiation of the combined refuse collection service (March, 1971), the city also began city-wide use of plastic bags. Pilot testing of plastic refuse storage bags began in April, 1969 with their experimental use by 500 residences in a medium income area for a period of three months. In December 1968, a second experiment involving 7,200 homes in low income areas was initiated for a two-year period following the 1968 civil disorders.

This experiment was funded through Interim Assistance funds received from the Federal government for repair and cleanup operations. From July 1970 through February 1971, 13,400 homes in the low income Model Cities area began a third, one-year test of the plastic bags. Model Cities paid the actual cost of $26 per year per dwelling unit.

Currently, the city accepts bids for plastic refuse storage bags on an annual basis and maintains a three-month inventory on hand in case of transportation or production delays or strikes. The city has developed detailed bag specifications used as a basis for bid solutions from potential suppliers. Currently, Union Carbide provides 2 mil polyethylene bags at a current cost to the city of $0.9899 per package of thirty bags. While commercial bags experience a failure rate of 200 per 1,000 bags, the city-supplied bags experience a failure rate of only 10 to 20 per 1,000 bags used. Bags are distributed continuously to each stop on a quarterly basis by city bag delivery crews. The city has instituted a random sample quality control plan to ensure bag quality by inspection upon delivery.

While curbside pickup is not mandatory in Kansas City, it is interesting to note that 87 percent of the residents now voluntarily set their bags out at curbside. This gradual shift to curbside pickup has certainly contributed to the productivity of both private and city crews. Private contractor bids have decreased each year for the three years of combined collection operations. Also, the city collection crews and disposal workforce gradually evolved from a conventional 5-day, 8-hour week to a 4-day, 10-hour week interval from October 1969 to March of 1971.

Perhaps the most visible current and historic public solid waste issue concerns the disposal function. In January of 1971, the city began operation of the Raytown Road landfill site on the Municipal Farm property. The site was filled by May 1972 and city operations were shifted to expand the Chouteau site inside the levee system. In the fall of 1971, the city began to look for a new disposal site. The Municipal Farm, west of Interstate Route 435, had an available area of 100 acres and in December 1971 the City Development Department designated it as a future fill site. The site was to be developed out of a current operating budget and plans were prepared "in-house." Site improvements, needed by 1972, were not made as the funding was not available. These planning efforts were precipitated by state law requiring the counties to develop solid waste management plans by January 1974. (See Appendix A.)

In early 1972, the Mayor appointed a Bond Issue Advisory Committee to study the city's capital needs for refuse disposal. Initial committee recommendations were too large and the Council wanted the bond issue scaled down. Of the final figure of 30 million dollars, 8.45 million dollars were earmarked for acquisition of land and facilities for solid waste disposal.

In early 1972, when the city attempted to begin development of the Municipal Farm landfill site, residents of the Eastwood Hill's area, through an established neighborhood organization (Eastwood Hills Homes Association), waged a highly publicized campaign to prevent the 100-acre Municipal Farm site from being used for landfill. Public relations efforts, data from the Metropolitan study, local university expertise, and information from the Army Corps of Engineers (which showed that the proposed site was prone to flooding) were used to prevent site implementation. By June of 1972, the Association had effectively blocked use of the Municipal Farm site and had managed to influence the Bond Committee to earmark 8.45 million dollars of the August, 1972 bond referendum for solid waste disposal purposes. The Association agreed that it would campaign for the total bond issue referendum if the city agreed to postpone the use of the Municipal Farm acreage as a landfill. The Council agreed to this on June 23, 1972. (See Appendix B.)

The interesting political aspect of the bond referendum was that it was being held as part of a City Charter Revision election. In city history, no bond issue had ever passed during a primary election. The Bond Promotion Committee and the Association both campaigned for bond passage, which included municipal court bonds. Interestingly, the strategy for the Bond Promotion Committee was formulated by a coalition of industry, local officials, and EPA representatives. The disposal bonds passed by 71 percent of the vote, while the municipal court bonds failed to carry.

Following passage of the bonds, the primary issue became selection of disposal sites. The City Council considered but did not pass an ordinance to release some $78,000 for a local consultant's study of site and facility options. The city established a working taskforce consisting of personnel from Public Works, Budget, City Development, MARC, and EPA, who would work under a guidance committee (consisting of the Director of Public Works, 2 Councilmen, the Director of City Development, the Executive Director of MARC, and an Assistant City Manager. While the initial studies of the working taskforce were being carried out, the representative of the Eastwood Hills Homes Association lobbied extensively for citizen participation in the disposal system planning effort. In January, 1973, the Council passed a resolution creating a Citizens' Advisory Committee on Solid Waste, with each Councilman's district being represented by two appointed citizens. This citizens' committee began operation in April, 1973, and included representation from the Eastwood Hills Homes Association, the Apartment Owners' Association, the Citizens' Environmental Council, the private refuse haulers, and the League of Women Voters.

From April to June, 1973, the working taskforce and the citizens' committee studied fourteen alternative disposal systems identified by city personnel and presented recommendations to the City Council. The recommendations were that sanitary landfill was the only viable disposal method and that recycling was not economically feasible at this time. However, it was recommended that sites include space for future use of shredding and recovery equipment. The groups then reviewed thirteen potential landfill sites and identified three final sites for consideration. These sites were:

(1) Hoover Site - 640 acres, now a limestone quarry, which would serve as a long-term site.

(2) Great Midwest Site - 360 acres of a 440-acre partially mined quarry, which would serve as a long-term site (would need extensive engineering study to evaluate the strength of mine pillars, approximately $100,000: appraisers won't set market value without the study); site is opposed by a number of residents.

(3) Hidden Valley Park - a two-year site owned by the city, now partially parkland.

Engineering studies are needed to determine structure feasibility, accessibility and haul costs, cover material availability and costs for all the sites. However, the Council has not yet authorized any engineering studies. Some members of the Council have demanded that the Municipal Farm site and one other site (Jerry Smith's Farm site) also be considered along with the three recommended sites. Essentially, a political impasse is blocking further site selection action.

As the city plan becomes finalized, it is expected that the three counties will incorporate the city plan into their state-required county plan, due in January, 1974 for Jackson County and six months later for Clay and Platte Counties. While Counties have the right to disapprove the city plan, it is not likely they would do so. The MARC must approve the set of five county plans by June 30, 1974, per state law. In terms of the city plan, the city feels that the residential collection function is now well under control and is therefore focusing its efforts on the disposal function. The city will "look at" better regulation of the commercial and industrial sectors' waste collection within the next two to five years, in response to hazardous waste statutes as they evolve. The city does monitor the privately owned southeast landfill, but expects to turn that responsibility over to the state in 1974. The city plan is being developed by the Director of Public Works, the working task force of the Solid Waste Committee, and the City Planning and Development Department. MARC staff attend all planning meetings "by invitation."

In summary, the evolution of the Kansas City solid waste management system in the last twenty years has been both multifaceted and complex. Changes in level of service, public sector-private sector mix, use of bags, shift to a 4-day, 10-hour work week, and the highly public issue-oriented disposal system planning effort have all contributed to this system's sporadic but continuous modernization. Federal and state laws have stimulated a number of the changes incurred. Finally, the private citizens of the city have taken a very aggressive role in guiding the system evolution, especially disposal function implementation.

4.4: Agencies Impacting the Solid Waste Management System

There have been a number of agencies on the Federal, state, county and local levels which have directly or indirectly affected the operations of the Kansas City Refuse Division. The following subsections summarize the nature of their influence.

4.4.1: Federal Level Agencies

The EPA, in promulgation of Federal statutes concerning air pollution had an effect in the eventual state ban on open burning. The "no burning" ban resulted in an increased volume at two sites and decreased their useful life. The Chouteau burning dump was converted to a sanitary landfill operation. Also, EPA Regional Office personnel have been have been involved in the development of plans for the city's disposal system. Federal solid waste regulations also have had an impact in terms of the state's promulgation of its own solid waste regulation act, which requires county plans for solid waste systems.

A model sanitary landfill demonstration project, developed by MARC, was jointly sponsored by HUD and EPA. The 46-acre landfill is located in Kansas City, Kansas and is used, to some degree, by Kansas City, Missouri collection agencies. Preliminary site analysis studies were funded by the U.S. Public Health Service in 1965, under a 2/3-1/3 (Federal-local) grant authorized by the 1965 Solid Waste Disposal Act, Section 206. HUD underwrote the funding for land acquisition and relocation of families on the site. EPA and Kansas City, Kansas have jointly funded the site's operating costs. EPA is providing approximately one million dollars over the three-year design life of the project. The site charges disposal fees and currently accepts 575 tons per day.

Both Model Cities and Interim Assistance funds were used by the city to upgrade services to low-income and riot-torn areas of the city. By using these funds to test the feasibility of plastic bag mixed refuse storage, the city was able to achieve sufficient experience to move towards city-wide use of plastic bags at the time of the March, 1971 shift to combined refuse collection by both city forces and by private haulers under contract to the city.

It is apparent that the city is already aware of the probable future impact of hazardous waste regulations, once these are implemented by Federal and state statute. This is the obvious future impact to be felt by the city in terms of Federal agency stimulus.

4.4.2: State Level Agencies

The State Division of Health, as of June 30, 1973, has the responsibility for issuing permits for operation of solid waste processing facilities or disposal areas. The law (Appendix A-1) also provides for state monitoring and regulation of facility design and operation.

In addition to various restrictive provisions, the law also requires all counties, or combinations of cities and counties, to provide for collection and disposal of solid wastes within their boundaries. Governmental units are given taxation and user charge powers to finance such services. Of primary importance is the requirement that counties containing all or part of a city of 450,000 or more in population must adopt a plan by January 1, 1974 for a county-wide solid waste management system. By June 30, 1974, the officially adopted plan must be submitted to the Division of Health. Sections 5 and 6 of the law specify the plan's requirements and the division's responsibilities, respectively.

Special guidelines have been established by the state for the MARC area (Appendix A-2). Besides defining criteria for the MARC area system, the guidelines require that both MARC and the State Division of Health review and approve the plans of the counties within the MARC area. The five Missouri counties in the MARC area are: Jackson, Platte, Ray, Clay, and Cass.

4.4.3: Regional Level Agencies

MARC (Mid-America Regional Council), the successor to the Metropolitan Area Planning Commission and the Mid-America

Council of Governments, is an umbrella agency responsible for area-wide planning. A HUD funded A-95 review agency, it includes in its membership five counties in Missouri and three in Kansas. Also members of MARC are the cities of: Kansas City, Missouri; Kansas City, Kansas; Independence, Missouri; and Overland Park, Kansas. It took over the two years of landfill planning effort by its predecessor, Metroplan, and is responsible for the demonstration landfill operation. It is responsible for a wide range of regional planning activities and for implementation of a number of public services on an area-wide basis. MARC has the authority to both review and approve the Missouri county solid waste plans, which will include the plans for the three counties containing sections of Kansas City, Missouri. MARC began formal operation in early 1972.

It is expected that MARC will have a broad impact on the nature of solid waste services in the region. Primary effects will be on the nature and location of landfill disposal sites. There is no clear indication of the extent to which collection operations will be affected by MARC's activities and state-assigned review and approval powers.

4.4.4: County Level Agencies

As noted, Kansas City, Missouri, is contained in three counties: Clay, Jackson and Platte. The Blue River basin, in which the city's Raytown - Municipal Farm Landfill is located, runs through the western portion of Jackson County. The following table lists the total 1970 population of each county and the population from each county residing in Kansas City.

County	Total Population	Population in K.C.	Total Land Area	Land Area in K.C.
Clay	142,000	56,132	412 mi^2	91.8 mi^2
Jackson	744,000	440,524	603 mi^2	156.5 mi^2
Platte	38,000	10,431	427 mi^2	68.0 mi^2
	922,000	507,087	1,442 mi^2	316.3 mi^2

As is apparent, Jackson County contains over half the land area and over 85 percent of Kansas City's population. Kansas City residents are a majority of the residents of Jackson County. The major solid waste planning activity in response to the state requirements is being carried out by the city. The counties are attempting to carry out some planning activity, but appear to be following the lead of the city in these efforts. The city is providing nominal assistance to the counties, primarily Jackson, for solid waste planning purposes. For these reasons, the primary county contact made by the study team was with Jackson County's Department of Public Works.

The Jackson County Department of Public Works is responsible for administering all county roads, highways, streets, sewers, bridges, and dams. It operates and maintains all county buildings, physical facilities, and equipment. With the passing of the Missouri Senate Bill 387 (the solid waste regulation and planning act), this department became responsible for preparing a county solid waste management plan which must receive approval from the Mid-America Regional Council.

Currently, Jackson County operates its own sanitary landfill. This landfill was started in March, 1973, and evolved from a series of burning dumps, first on the Blue River, and then on Quarry Road. These were under the supervision of the County Highway Engineer, an elected official. In 1970, Jackson County changed to a charter (home rule) form of government and now the administrative functions of the county are managed by appointed directors. The Jackson County landfill handles approximately 17 tons per day of refuse brought in by county residents including those from Kansas City. One caterpillar D-6 tractor with two men operate the 30-acre site. There is no charge for this service, which is designed to alleviate the open dumping on roadsides in the county.

A significant factor in locating landfills in Jackson County is the Little Blue Valley flood plain. The Little Blue Valley is the drainage basin of the Little Blue River and covers one third of Jackson County as shown in Figure 5. It covers 224 square miles, ranges from 2 to 13 miles in width, and is 30 miles in length. The flood plain contains about 15,000 acres which are subject to flooding. A planned comprehensive flood damage prevention program is being sponsored by Jackson County. Metropolitan area development is rapidly expanding into the valley and subsequent solid waste generation in this area will pose a future collection and disposal problem.

4.4.5: Local Level Agencies

At the local level, there are a number of organizations which have had impact on the Kansas City solid waste system. These organizations include the local union which represents the blue collar workforce, two local associations organized to focus on solid waste issues, and the League of Women Voters.

American Federation of State, County and Municipal Employees

Local No. 500 of AFSCME is the recognized bargaining agent for all "classified" or blue collar workers in Kansas City, except for mechanics and police and fire personnel. The union membership includes 90 percent of the city's refuse collection workforce. The local's president is a city employee. Presently, the union has no contract with the city, as state law does not make such bargaining mandantory. State law also prohibits public employees from going on strike. The union does have a dues checkoff procedure with the city. The city's "Personnel Rules and Regulations" establish a standard grievance procedure for all employees.

In July, 1972, the union presented a series of demands during a one-day meeting with the Director of Public Works. The issues were:

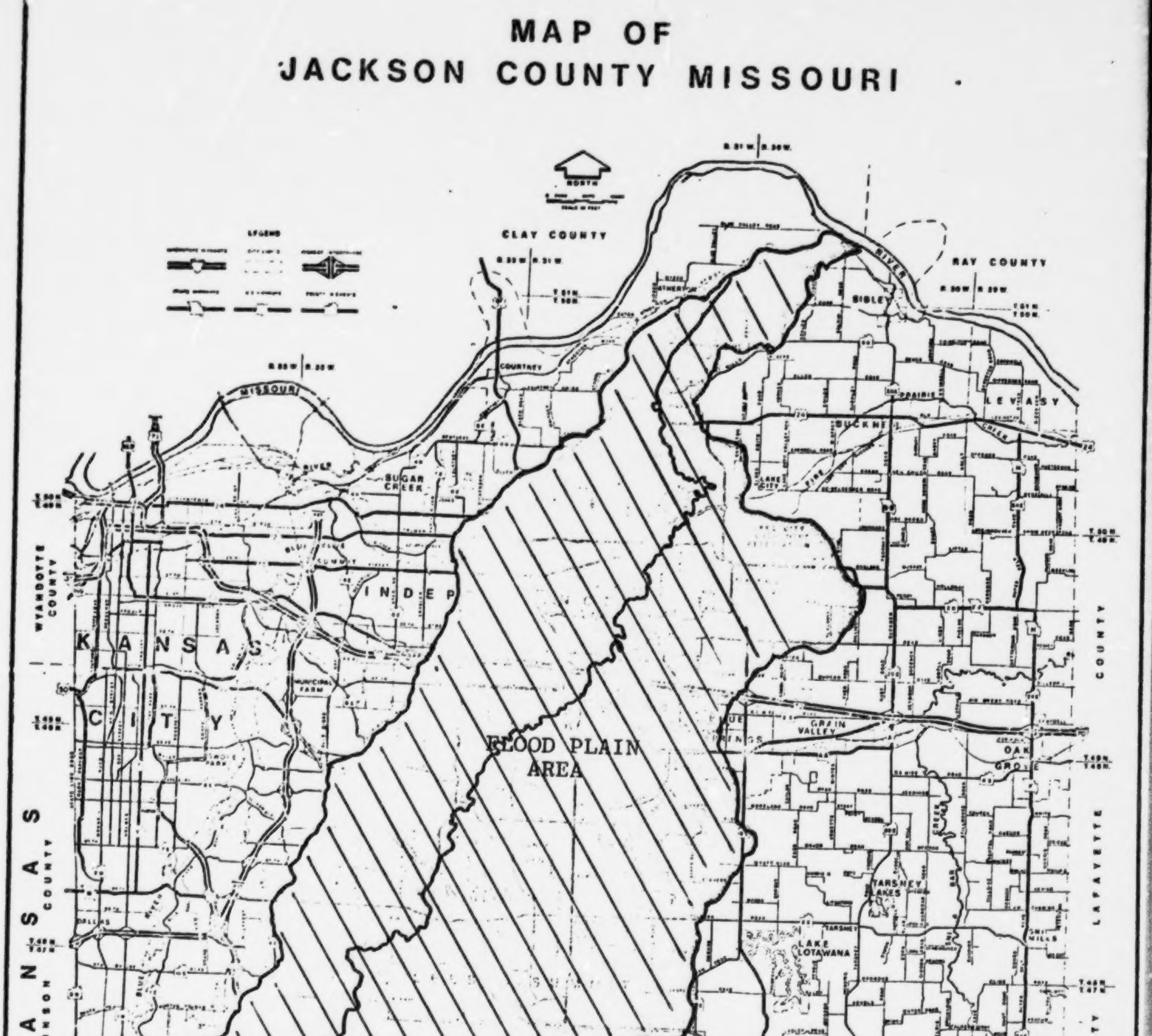

MAP OF
JACKSON COUNTY MISSOURI
NORTH
LEGEND
CLAY COUNTY
RAY COUNTY
MISSOURI
RIVER
COURTNEY
SUGAR CREEK
SIBLEY
PRAIRIE
LEVASY
BUCKNER
INDEP
KANSAS
CITY
WYANDOTTE COUNTY
KANSAS
JOHNSON COUNTY
FLOOD PLAIN
AREA
GRAIN VALLEY
OAK GROVE
TARSNEY LAKES
LAKE LOTAWANA
LONE JACK
COCKRELL
GREENWOOD
MARTIN CITY
LAFAYETTE COUNTY
JOHNSON COUNTY
CASS
COUNTY

FIGURE 5: LITTLE BLUE RIVER FLOOD PLAIN AREA

- Time-and-a-half for overtime
- Need for three-man collection crews
- Provision of uniforms by the city and daily uniform changes
- Shower and restroom facilities

The union was ready to defy the law and strike if these issues were not resolved. The demands were essentially met by the city, not by changing its operating rules, but by changing the operating policy of the Department of Public Works.

The union began its activities in 1960 with a 22 point program of worker needs. In 1962, a pension plan was instituted. By 1973, all of the points were achieved with the exception of a contract and a longevity salary bonus plan. Fringe benefits and salary levels have been made competitive with local industry. Sick leave, vacation time, health and welfare benefits, retirement and other fringe items have been upgraded. In essence, the union has been very effective while negotiating under the constraints of no contract and no strike situations.

One of the future issues from the union's viewpoint is the changing of state law to force the city to enter into contracts with the Union. The current law permits cities to enter into contracts with unions but does not make such bargaining mandantory. The city recognizes that the law may be changed and is preparing for labor-management negotiations.

The union appears to have developed a close working relationship with the city administrator. Demands generally have not been excessive and the city has been responsive to union requests. As the city has reduced the areas of the city it collects (due to closing of landfills and equipment age), the number of collectors has decreased. Personnel were reduced by transfer or normal attrition. The city has managed to keep its labor costs reasonable by three techniques: a shuttle system in which extra trucks are put into collection zones and an effective crew of three per truck is maintained; a labor pool of temporary employees to fill absent positions; and, the shifting of routes from city to private contractor collection. A shift from the normal workweek to a 4-day, 10-hour workweek, precipitated by the issue of working scheduled overtime at straight-time rates, has reduced absenteeism and improved morale. (The shuttle system and the "4 and 10" workweek are further discussed in Chapter 5.)

As a last facet in labor-management relations, the city carries out an annual employee performance review (see Appendix C for evaluation report form).

Eastwood Hills Homes Association

This association was formed in 1972 to fight the city's planned expansion of the Raytown Road - Municipal Farm landfill. The additional 100 acres would have been an eyesore to the residents of the Eastwood Hills area, which overlooks the proposed site. As previously discussed, the association successfully fought the site implementation, helped to pass a disposal bond issue under unusual conditions, and managed to have the city form a Citizens' Advisory Committee on Solid Waste. The association has exerted a powerful influence on disposal system planning by use of the local media, by citizen campaigns, and by use of existing data, studies and local professionals with environmental backgrounds.

Citizens' Environmental Council

The C.E.C. is a non-profit umbrella organization with over 300 individual members and 45 member organizations, including other environmentally oriented groups and commercial organizations. Organized in 1970, its basic purposes are to influence city actions which affect the environment and to serve as a clearinghouse for other groups' activities.

In July 1971, it established permanent vans for newspaper collection and recycling in five locations, primarily shopping centers. From July 1972 to July 1973, this program--in cooperation with the Packaging Corporation of America--collected almost 2.5 million pounds of paper. Its STEP program (Save The Environment, Please) ran for fifteen months and utilized a grinder/baler facility to recover glass, cans and paper. Using volunteer workers, the STEP program collected over 500,000 pounds of glass, almost a million pounds of paper, and over 400,000 pounds of tin cans.

The C.E.C. managed to have Black and Veatch, a local consulting firm, provide two engineers for a study of recovered material marketability. In September 1972, the report indicated that there was no economically viable local market for recovered materials.

The C.E.C.'s overriding goal is citizen awareness and participation. It wants to help inform residents that landfills can be well run and that plastic bags are a good innovation. The C.E.C. notes, however, that plastic bags for combined refuse collection thwart the concept of source separation, as the system is now being run. The C.E.C. has representation on the Citizens' Advisory Committee for Solid Waste.

League of Women Voters

The League has had active representation on the Citizens Advisory Committee for Solid Waste. Unfortunately, local representatives were not available for interview during the site visit, so the full scope of the League's activities regarding solid waste issues could not be determined.

Other Organizations

While not directly impacting the city, it is evident that the engineering consulting firm of Black and Veatch has had extensive involvement in regional solid waste planning studies and in site engineering studies. Mid-West Research Institute, located in Kansas City, Kansas has also been active in both local and national solid waste resource recovery studies.

5

SOLID WASTE SYSTEM CHARACTERISTICS

The Department of Public Works is responsible for the collection and disposal of essentially all of the city's residential refuse and bulky wastes, and for street cleaning operations. Within the department, the Refuse Division is responsible for administration of the city's joing public-private sector collection and disposal operations. The Street Maintenance Division is responsible for street sweeping and flushing operations. The Refuse Division does not collect abandoned vehicles, construction/ demolition wastes, special or hazardous wastes, commercial or industrial wastes, or sewage treatment residues. The city's landfill will accept sewage grip for disposal. The division's moving equipment is services by the Motor Equipment Division, also within the Department of Public Works.

Residential stops of less than seven units are collected by either the city or by one of six private haulers under contract to the city. Some 11,000 residents, belonging to thirty-six homeowners' associations, contract directly with private haulers for refuse collection and receive a rebate averaging $18.42 per house per year from the city through contracts administered by the Refuse Division. The city provides and delivers thirty plastic bags per quarter to each dwelling unit that it or its contractors collect, and all waste must be so bagged. Mixed refuse is collected on a once-a-week basis and the bags may be placed anywhere as long as they are above ground level and visible.

Currently, 87 percent of the residents voluntarily place their bags at curbside. The city collects all bulky items using from two to five flat bed trucks. Lot cleaning is also carried out by approximately six older personnel who were excess personnel when the shuttle system was implemented.

Currently, the city operates one sanitary landfill which is limited to accept city refuse from city vehicles only. City packers may also use the MARC demonstration landfill and a private fill located in the southeast sector of the city. The city had operated three sites until May 1972 when the Raytown Road site was closed down. The Blue River Road site was closed down in August 1972. As previously discussed, the city is attempting to locate and evaluate alternative disposal landfill sites under pressure of the need for county plans and a recently passed disposal bond issue. The MARC and the private southeast fill are more convenient to certain collection zones and are used by the city to avoid long haul distances. Flooding potential, lack of adequate cover material, and an assortment of other problems are inherent in site selection issues.

To perform its share of the solid waste collection activities, the city employs one hundred and eighty men (not including labor pool personnel) and uses eighty-one pieces of equipment, including sweepers and various support vehicles. For disposal operations, an additional fifteen men and nine pieces of equipment are utilized.

Since March 1971, the city has collected mixed refuse by means of its combined public-private system. Previous experimentation led to mandatory city-wide use of plastic bags. The city collects no commercial or industrial accounts. The Refuse Division field workforce is on a ten hour-four day work week and was the first city operation to receive time-and-a half for overtime.

5.1: Collection Responsibilities of the Refuse Division

The division is both directly and indirectly responsible for essentially all of Kansas City's residential refuse. The city forces and the city's contractors each collect from almost 67,000 dwelling units per week. An additional 10,716 residential units in "homes associations" contract for their own services with private haulers and receive a rebate under terms of a contract each association negotiates with the city. Financial data and a sample homes association contract are presented in Appendix D. Stops with more than six units and trailer parks are considered to be "commercial" and must contract directly with private haulers for service. Appendix E contains the City Code and related Regulations for residential refuse collection.

5.1.1: Mixed Refuse Collection

Duties and Level of Service

City crews collect mixed or combined refuse from Monday through Thursday on a once-a-week basis from 66,456 units. Contractor crews collect from Monday through Friday, also on a once-a-week basis, from 66,800 units.

The collection of mixed refuse is generally unlimited carryout; that is, crews will pick up all tied plastic bags of less than sixty-five pounds each from any collection point which is visible, at ground level, readily accessible, and outside of any enclosure. If storage containers are used for the plastic bags in the process of being filled, they must be of 30 gallon capacity and must be covered. Bags are sized to fit standard 30 gallon containers and generally contain putrescibles (garbage), cans, bottles, newspapers, clippings, grass; and small obsolete waste items.

The mixed refuse collection crews will also collect other refuse if it is placed in disposable containers or is bundled and tied in two-foot by four-foot bundles, and weighs less than sixty-five pounds per bundle or bag. Such refuse or "rubbish" must be placed at curbside or the alley line for collection.

Specifications for the plastic bags purchased by the city are in Appendix F. Included in the specifications are testing and standard requirements. Bags now used are two mils thick, green in color, packaged in sets of 30 bags per package, and palletized for warehouse handling. The city maintains a three-month inventory of bags at all times in case of transportation or production strikes. Bids for bag procurement are let on a yearly basis. Strict quality control procedures are used to ensure bag performance.

Manpower and Equipment Allocation

There are currently twenty-six mixed refuse collection crews consisting of a driver (Equipment Operator II) and two helpers (Laborer III), responsible for collection from the city collection area (see Figure 6 for city collection area boundaries).* Within this collection area, which is about one-third of the city area but contains 50 percent of the population, the city crews collect in four districts, Districts 30, 40, 50, and 60, as depicted in Figure 7. Table 3 presents the number of dwelling units by district per day. Each vertical "zone" of four districts is collected once a week. The collection activities within each of the four districts are under the supervision of a foreman (see Figure 8 for detail of Refuse Division Organization).

---

*In reality the ratio is eight laborers for each six trucks put into a collection district, as will be explained later.

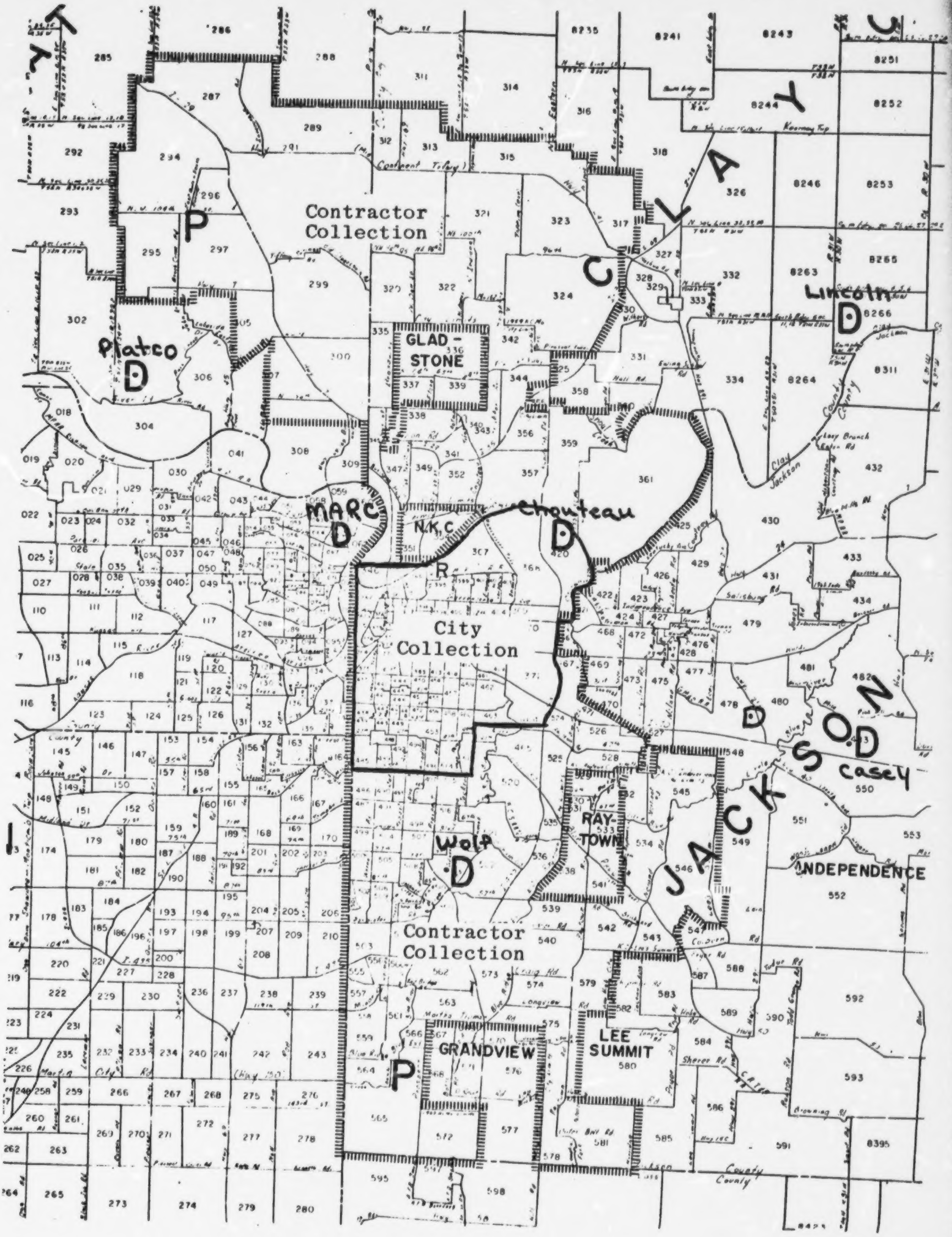

CLAY
Contractor Collection
P
Platco
D
GLAD-STONE
Lincoln
D
MARC
D
N.K.C
Chouteau
D
R
City Collection
JACKSON
D
D
Casey
RAY-TOWN
Wolf
D
INDEPENDENCE
Contractor Collection
LEE SUMMIT
GRANDVIEW
P

FIGURE 6: CITY BOUNDARIES, CITY COLLECTION AREA, AND LANDFILL SITES

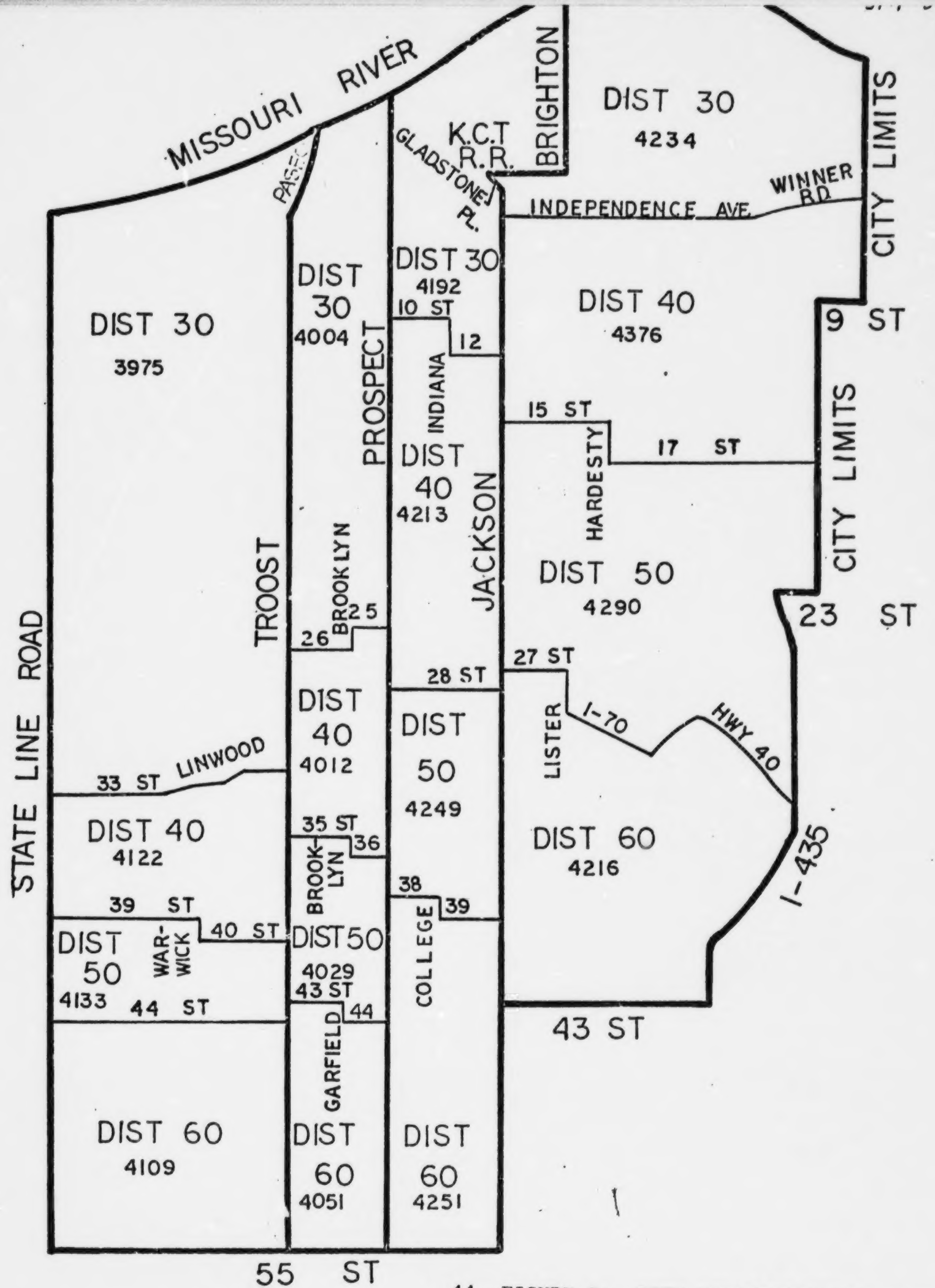

MISSOURI RIVER
PASEO
BRIGHTON
K.C.T R.R.
GLADSTONE PL.
DIST 30
4234
CITY LIMITS
WINNER RD
INDEPENDENCE AVE.
DIST 30
3975
DIST 30
4004
PROSPECT
DIST 30
4192
10 ST
12
INDIANA
DIST 40
4376
9 ST
CITY LIMITS
15 ST
HARDESTY
17 ST
DIST 40
4213
JACKSON
DIST 50
4290
CITY LIMITS
23 ST
TROOST
BROOKLYN
25
26
28 ST
27 ST
STATE LINE ROAD
DIST 40
4012
DIST 50
4249
LISTER
I-70
HWY 40
33 ST
LINWOOD
DIST 40
4122
35 ST
36
BROOK-LYN
DIST 60
4216
I-435
38
39
39 ST
40 ST
DIST 50
4133
WAR-WICK
DIST 50
4029
COLLEGE
43 ST
44 ST
44
43 ST
GARFIELD
DIST 60
4109
DIST 60
4051
DIST 60
4251
55 ST

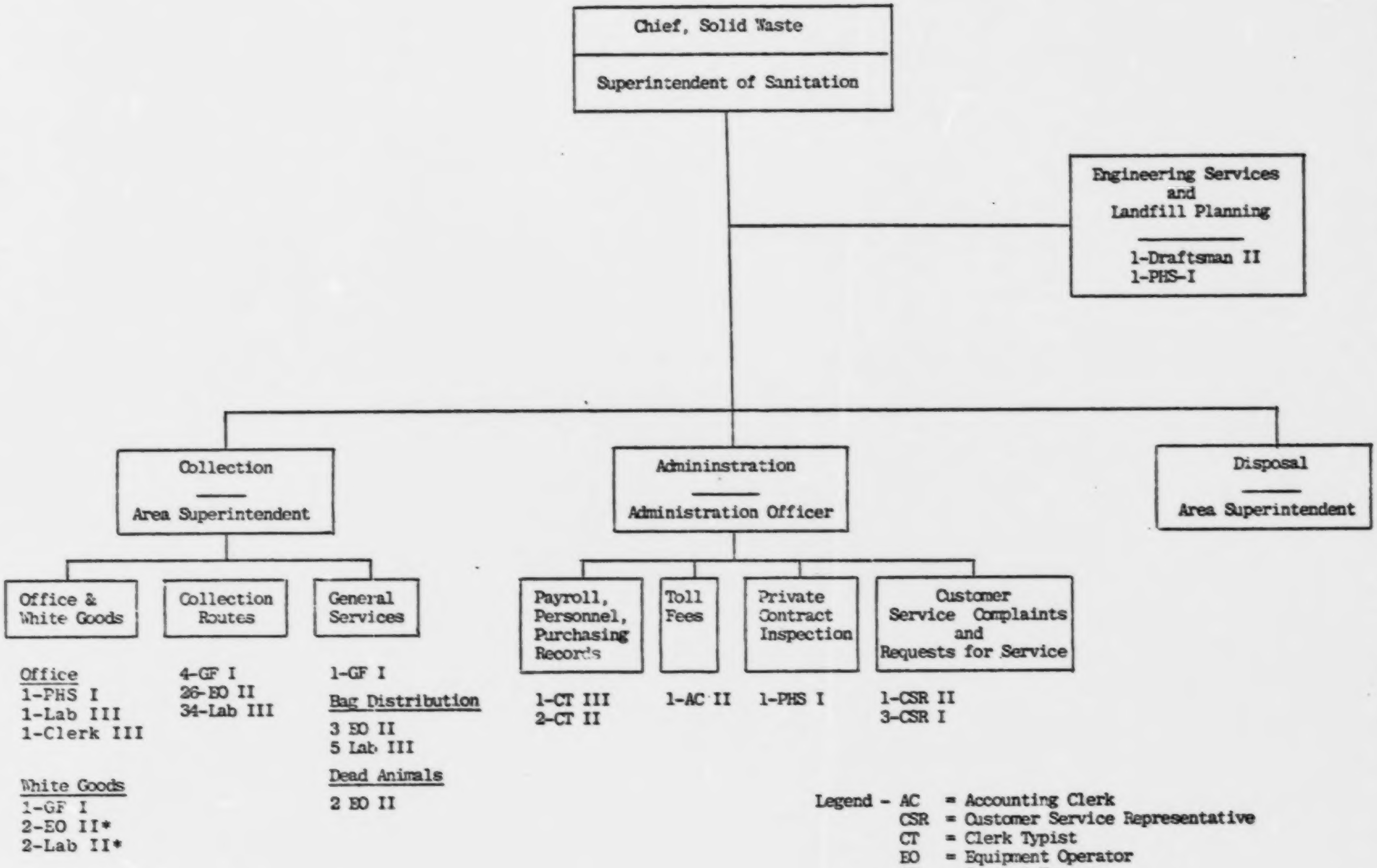
FIGURE 7: CITY COLLECTION DISTRICT

TABLE 3

CITY AREA

NUMBER OF DWELLING UNITS BY DISTRICT BY DAY

Clark Dist 30 930	Monday Tuesday Wednesday Thursday Total	3,975	4,004	4,192	4,234	16,405
Mozee Dist 40 940	Monday Tuesday Wednesday Thursday Total	4,122	4,012	4,213	4,376	16,723
Jones Dist 50 950	Monday Tuesday Wednesday Thursday Total	4,133	4,029	4,249	4,290	16,701
Nero Dist 60 960	Monday Tuesday Wednesday Thursday Total	4,109	4,051	4,251	4,216	16,627
TOTALS		16,339	16,096	16,905	17,116	66,456


Chief, Solid Waste
Superintendent of Sanitation
Engineering Services and Landfill Planning
1-Draftsman II
1-PHS-I
Collection
Area Superintendent
Admininstration
Administration Officer
Disposal
Area Superintendent
Office & White Goods
Collection Routes
General Services
Payroll, Personnel, Purchasing Records
Toll Fees
Private Contract Inspection
Customer Service Complaints and Requests for Service
Office
1-PHS I
1-Lab III
1-Clerk III
White Goods
1-GF I
2-EO II*
2-Lab II*
4-GF I
26-EO II
34-Lab III
1-GF I
Bag Distribution
3 EO II
5 Lab III
Dead Animals
2 EO II
1-CT III
2-CT II
1-AC II
1-PHS I
1-CSR II
3-CSR I

Legend - AC = Accounting Clerk
CSR = Customer Service Representative
CT = Clerk Typist
EO = Equipment Operator
GF = General Foreman
Lab = Laborer
PHS = Public Health Sanitarian
TC = Toll Collector

*2 to 5 each as required by season of year

FIGURE 8: REFUSE DIVISION ORGANIZATION

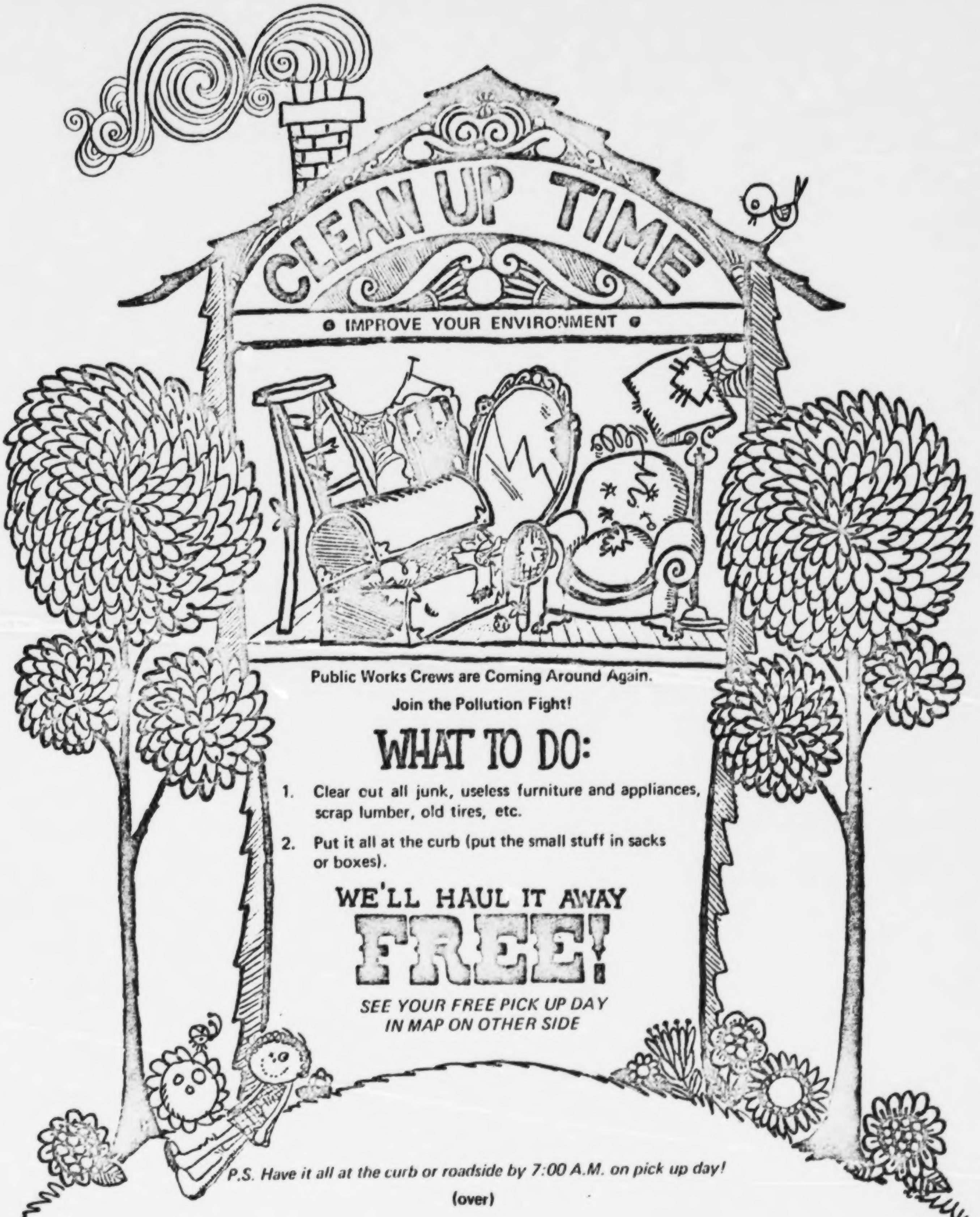
According to the city, formal collection routes are not used. Either six or seven packer trucks are allocated to each district within the daily zone. A shuttle system is used, in which for each six or seven trucks, from eight to ten laborers assist. During the first load, the drivers of the two extra trucks assist in collection. They then begin to "shuttle" the full trucks to the disposal site while collection continues with the remaining packers. The six, twenty-five yard packers are allocated across the four districts according to expected collection volume. The eighteen yard packers make up the remainder of the mixed refuse collection equipment. Each foreman is allocated a radio-equipped pick-up truck. The Refuse Division maintains a labor pool of approximately 15 percent extra personnel to supplement its collection labor force and to provide replacements for vacations and absent employees. Temporary day labor is used only if unscheduled absences become excessive.

Crew efficiency is enhanced by the use of the shuttle system, the use of plastic bags, the degree of voluntary curbside set-out by residents, and the 10 hour-four day work week. Crews normally complete their district collection responsibilities in 8½ hours, thus there is an informal task incentive system in operation: when a district is collected, its crews are done for the day. Average route lengths were not known and the average one-way distance to a disposal site is six miles (20 minutes travel time). Trucks average three trips per day to disposal sites with a daily average of 2½ loads per truck.

Of some interest is the history of transition from a five to a four day work week, which occurred in three phases. In October 1969, the division put its disposal toll collectors on a ten hour day, 4 day work week to eliminate the need for paying overtime to these employees. After this, the landfill operators were also put on a 10-4 system. In December 1969, the city began pickup of 7,200 homes under Federal Interim Assistance to riot-torn areas. This was a combined refuse pick-up using plastic bags and three trucks on a 5 day, 8 hour per day system. In February 1970, the division went to two crews on a 10-4 basis. In June 1970, the city received a Model Cities contract for combined refuse collection in an area which overlapped the interim assistance area. Two additional crews on a 10-4 basis were added for this expanded bag pick-up service. At the "yard," the eight hour 5-day crews were continually exposed to the 10 hour 4-day crews coming in not much later and leaving on Thursday for a three day weekend.

In July 1970, the city terminated its commercial collection activities. From August, 1970 through February, 1971, instead of the casual spring clean-up, the city assigned six packers and three flat-bed crews to selected areas for one week periods of clean-up (see Figure 9 for Citizen Notice Flyer). This effort was also scheduled on a 10-4 basis. During this period, this force covered the city twice and eliminated the large costs of special spring clean-up efforts. At this time, the rest of the city was still on a separate collection for refuse and trash.

In December 1970, the earning tax increase was passed and a total of $3.6 million was earmarked for the initiation of a combined refuse collection program. Additional revenues really amounted to $2.4 million over the $1.2 million then budgeted for separate garbage/trash collection, and some salary adjustments were made. In March 1971, when the combined refuse, public/private contractor system began, all city collection forces went to a 10-4 system and city-wide use of plastic bags was made mandatory.



CLEAN UP TIME

IMPROVE YOUR ENVIRONMENT

Public Works Crews are Coming Around Again.

Join the Pollution Fight!

WHAT TO DO:

1. Clear out all junk, useless furniture and appliances, scrap lumber, old tires, etc.
2. Put it all at the curb (put the small stuff in sacks or boxes).

WE'LL HAUL IT AWAY

FREE!

SEE YOUR FREE PICK UP DAY
IN MAP ON OTHER SIDE

P.S. Have it all at the curb or roadside by 7:00 A.M. on pick up day!

(over)

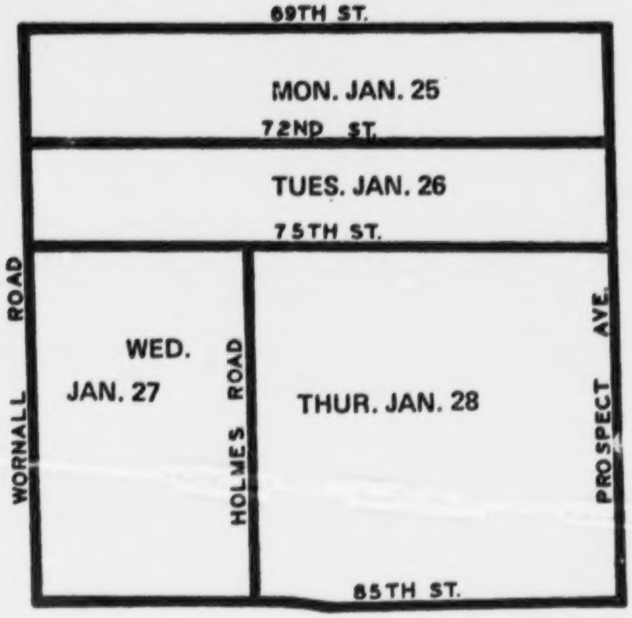
FIGURE 9: SPECIAL CLEAN UP FLYER

KANSAS CITY, MISSOURI

PICK UP ROUTES AND DATES

FOR

CITY WIDE CLEAN UP


69TH ST.
MON. JAN. 25
72ND ST.
TUES. JAN. 26
75TH ST.
WORNALL ROAD
WED.
JAN. 27
HOLMES ROAD
THUR. JAN. 28
PROSPECT AVE.
85TH ST.

CLEAN OUT ALL JUNK
PUT IT AT THE CURB
WE'LL HAUL IT AWAY—FREE!

PUBLIC WORKS DEPARTMENT
KANSAS CITY, MISSOURI

(OVER)

In March 1971, when the combined refuse, public/private contractor system began, all city collection forces went to a 10-4 system and city-wide use of plastic bags was made mandatory.

The current mixed refuse collection fleet consists of thirty, 18-yard compactors (White, cab-over-chassis; 12, 1967 Garwoods and 18, 1967 Pack-Mors) and six, 25-yard compactors (3, 1969 Chevrolet/ Leach 2R's and 3, 1971 White/Cobeys). The three Leaches were bought used in 1970 and have standard transmissions which have maintenance problems. In fiscal year 1973-1974, the city will purchase four 25-yard packers and will replace the three Leach chassis. Three additional 25-yard packers will be added.

Also before the Council for approval are leases for one 29.2 yard Shu-Pack (Maxon, dual-drive side-loader with auxiliary engine for 1 man crew) and one Gulf Mechanical Bag Retriever. These trucks will be used on an experimental basis and the areas they serve will be required to have mandatory curbside set-out of plastic bags. This experimentation will be carried out to evaluate rear loader versus side load efficiencies before replacement of the aged 1967 fleet. The current fleet of 18-yarders have high maintenance costs. The shift from separate to combined collection caused increased breakdown problems, which explains why the city maintains a fleet of thirty 18-yarders when only twenty are used on a daily basis.

Table 4 presents the manpower and equipment allocations for the entire collection system. Labor pool personnel are not shown.

Efficiency and Productivity

Table 5 presents the current operating characteristics for all solid waste activities during fiscal year 1973. Attached to the table are the assumptions and explanatory notes used for

TABLE 4
MANPOWER AND EQUIPMENT ALLOCATIONS - COLLECTION FUNCTION

Function / Personnel	Public Sector Operations[1]						
	Mixed Refuse[6]	Bulky Items	Dead Animals	Bag Distribution	Admin.	Street Sweeping[2]	Total
Laborers	34	2	-	4	1	36	77
Drivers, Regular	26	2	2	3	-	30	63
Drivers, Support Trucks or Equipment	-	-	-	3	-	4	7
Superintendents/Supervisors	1				3[4]	3	7
Foremen	4	1[3]	1		-	9	15
Clerical/Secretarial	1				8	1	10
Management/Professional/ Technical [5]	1				3	-	4
TOTALS	67[7]	5	2	11[8]	15[11]	83	183
Equipment							
Packers	36[10]	-	-	-	-	-	36
Support or Pickup Trucks	6	-	2	-	-	4	12
Open Bed	-	-	-	2	-	-	2
Liftgate Trucks	-	5[9]	-	-	-	-	5
Leaf Truck	-	-	-	-	-	-	-
Mechanical Sweepers	-	-	-	-	-	18	18
Street Vacuumers	-	-	-	-	-	2	2
Flushers	-	-	-	-	-	6	6
TOTALS	42	5	2	2	-	32	81

TABLE 4 (Continued)

MANPOWER AND EQUIPMENT ALLOCATION

1/ The Department of Public Works provides for the collection of residential refuse by three mechanisms. Of a total of 143,000 dwelling units, the city collects approximately 66,500 units with its own forces. Private haulers under contract to the city collect another 66,800 units. The city subsidizes a number of homes' associations, including some 11,000 units, which contract with private haulers for collection services.

2/ Street sweeping operations are performed by the Street Maintenance Division, also in the Department of Public Works.

3/ Foremen in charge of collection Office and Bulky Item pickup.

4/ Includes: the Chief, Solid Waste, who manages the Refuse Division; a Superintendent of Sanitation, his assistant; and, an Administration Officer who manages the administrative branch operations.

5/ Includes 3 Public Health Sanitarians, one assigned to the Collection Branch; one to Administrator, for private contract inspection; and one serving as a draftsman; the fourth man is a draftsman.

6/ A labor pool complement, not included in these data, provides seven drivers (equipment operators) and eight laborers. This pool of full status employees is used to cover normal absences due to vacations, sick leave, etc.

7/ Includes the Collection Superintendent, one Public Health Sanitarian, and one clerk.

8/ Includes one forman responsible for dead animal collection and bag distribution crews.

9/ Includes three owned and two rented 16-foot flatbed trucks.

10/ Does not include four to six new 25-yard packers to be purchased in Fiscal Year '74. Also, leases for a 29.2 yard Shu-Pak (Maxon dual drive, side loader, auxiliary engine, for 1-man crew) and a Gulf MBR (1-man crew, mechanical bag retriever) are before the City Council for approval.

11/ Does not include 26 Emergency Employment Act personnel transferred over from other street maintenance activities on part-time basis.

TABLE 5

EFFICIENCY AND PRODUCTIVITY DATA FOR KANSAS CITY

	Collection Function / Parameter	City Operation				City Contractors
		Mixed Refuse	Bulky Items	Dead Animals	Mechanical Sweeping	Mixed Refuse
Community Description	Population Served	416,631 1/				
	No. of Resid. or Comm. Units 2/	66,456				66,800
	Street Miles	NA			2700 gutter mi.	NA
	Alley Miles	NA				NA
	Area (sq. mi.)	316.3				
	Pop. density (peo/sq.mi.)	1603				
Waste Amounts	Annual Amounts Collected	86,439 tons	2346 tons 5/	8,000 animals	35,000 cu yd 10/	78,156 tons
	Lbs./unit/wk	43 9/	1/2	NA	-	45 9/
	Lbs./person/day	2.11 8/	.027	NA	-	2.2 8/
Collection System Description (inc. Level of Service)	Point of Collection	curbside or backyard 3/	curbside	NA	curbs & gutters	curbside or backyard 3/
	Freq. of Collection	1/week	on request	on request	18/	1/week
	Type of Storage Container	Plastic bags	None Specified		-	Plastic bags
	Avg. Dist. to Disp. Site	6 mi.	6-7 mi.	NA	6 mi.	NA
	Avg. Miles Driven/truck/day	57 12/		NA	16-18 mi.	NA
	Avg. Hours worked/day	8½	9	NA	8	NA
	Direct men	64 7/	5	2	54	NA
	Crews	26 6/	2	2	26	NA
	Crew Size	3 6/	2	1	1(sw), 3(vac)	NA
	Trucks 4/	42	5	2	30	NA
Wages	Avg. wages and fringe for laborers	$3.01 Direct $0.45 Fringe				NA
	Avg. wages and fringe for drivers	$3.49 Direct $0.52 Fringe				NA
Collection Cost/Efficiency Figs.	Stops/Crew/Day	639 11/	25-35	NA	-	NA
	Tons/Crew/Day	15.98 11/	4.56	NA	-	NA
	Coll. Cost/resid. unit/yr.	$35.95			$3.68	$25.83
	Coll. Cost/person/yr.	$12.35			$1.26	$8.87 8/
	Coll. Cost/ton/yr.	$27.64			$14.01/cu yd	$22.08
	Total Coll. Cost/yr.	$2,388,990 15/			$490,494	NA
Disposal	Type & No. of Disp. Sites	City now operates one sanitary landfill and brings packer loads to MARC site and to private sector sites.				NA
	Total Disp. Cost/yr.	$427,960 16/			$163,497 13/	NA
Total Cost	Total Cost/yr.	$2,816,950 15/			$653,988 13/	$1,725,701 14/
Misc. Cost Ratios	Coll. Expense as % of tot. Exp.	84%			75%	NA
	Coll. labor expense as % of tot. Coll.	59%			51%	NA
	Coll. equip. expense as % of tot. Coll.	22%			49%	NA
	Proc. & Disp. expense as % of tot. exp.	16%			25%	NA
	Proc. & Disp. labor expense as % of tot. disp.	19.4% 17/			NA	NA

NOTE: No costs or other data are included in this table for the city's payments to the homeowners' associations, which include 10,716 units, as they receive rebates and contract for their own services. Costs for plastic bags are allocated to city and contractor operations. No overhead charges (support costs) are included in the cost data: thus the costs presented above represent total operating expenditures.

TABLE 5: (Continued)

EFFICIENCY AND PRODUCTIVITY DATA FOR KANSAS CITY

ASSUMPTIONS AND COMMENTS

1/ Total population, based on March 1973 Chamber of Commerce estimate, is 513,837. Since the city and its contractors serve 143,172 of the 176,373 dwelling units, the estimated actual population served is approximately 416,631.

2/ 1970 Census indicates approximately 176,373 occupied dwelling units. City estimates that city forces and city contractors collect 66,456 and 66,800 units, respectively. 10,716 units are in homes' associations not collected by city or city contracted services. Of these 143,172 units, about 18,000 units are in multi-family dwellings served by the city. Thus, a total of approximately 143,974 units are either in homes' associations or are served by city/city-contractor forces. Of the remaining 32,401 units not served by city or city contractors, it is felt that most are in facilities containing more than 6 units, which must provide for their own collection by direct contract with private haulers.

3/ City ordinance does not specify collection point, but an estimated 87% of residents place plastic bags at curbside.

4/ Includes supportive equipment.

5/ City stated that an average of 259 pounds per stop are collected and that one-ninth of 143,172 stops are collected each year. This yields an annual tonnage for bulky items of 2346 tons per year collected by city forces. Private sector under city contract collects no white goods.

6/ The city uses twenty-six of its thirty-six trucks per day on a 4-day per week, 10-hour day basis. "Shuttle System" is used, in which 6 to 7 packers and 8 laborers are assigned to each of 4 daily collection zones. Six, 25-yard packers (drivers only) are assigned across the 4 daily zones. The extra drivers collect on the first load, while their trucks are idle: they then shuttle the filled trucks to the landfill, while collection proceeds with the empty trucks. Ten trucks are used as spares, as the fleet is relatively old and requires frequent maintenance.

7/ Does not include labor pool complement of drivers and laborers used to cover vacations and other normal absences.

8/ Based on an average of 2.91 persons per residence and a seven-day week.

TABLE 5: (Continued)

EFFICIENCY AND PRODUCTIVITY DATA FOR KANSAS CITY

ASSUMPTIONS AND COMMENTS

9/ Average figure given by city personnel was 43 pounds. For Fiscal Year 1972-1973, the 43 pound figure was derived as follows:

May 1 - Oct. 1, 1972	22 weeks x 82,000 dwelling units
Oct. 1, 1972 - April 30, 1973	30 weeks x 66,800 dwelling units
	3,808,000 dwelling unit weeks

City crews collected 81,902.24 tons

$$81{,}902.24 \times 2000 \text{ lbs/ton} = 163{,}804{,}480 \text{ lbs.}$$

$$\frac{163{,}804{,}480 \text{ lbs}}{3{,}808{,}000 \text{ dwelling unit weeks}} = 42.8 \text{ lbs/week}$$

$$\cong 43 \quad \text{lbs/week}$$

10/ Based on range of 600 to 800 cubic yards per week.

11/ Based on four-day workweek.

12/ Based on average weekly mileage data (for sample of 25 weeks) for both packer and bulky waste trucks.

13/ Costs were calculated by prorating operating costs for seven months of operation. Approximately ten thousand dollars per month of collection labor wages are supported by E.E.A. funds but are included here to illustrate total cost of operation.

14/ The $1,725,701 figure is based on the budgeted '73-'74 costs and not on the number of stops at bid time, which was 65,496, rather than the current 66,000. This figure includes the costs of the plastic bags for stops collected by contractors.

15/ Includes costs for city collection and bags for city collection. Does not include homeowners' associations rebate plastic bags for private collection, support costs ($425,204) charged by city (overhead), or contract collection costs. A more realistic current average total cost per dwelling unit per year might be derived as follows:

TABLE 5: (Continued)

EFFICIENCY AND PRODUCTIVITY DATA FOR KANSAS CITY

ASSUMPTIONS AND COMMENTS

(a) FY-'73-'74 Total Refuse Budget is \$4,309 million for city and contractor collection and disposal, homes associations rebates, dead animal and white goods collection, and bags purchasing/storage/delivery.

(b) $\frac{\$4,309 \text{ million}}{12 \text{ months} \times 143,000 \text{ dwelling units served}}$ = \$2.51 per dwelling unit per month

(c) \$2.51 x 12 months = \$30.13 per year per dwelling unit.

16/ Does not include support costs of \$30,448.

17/ This percentage is now very low because the city has closed two of its three landfills and is paying disposal fees at other sites.

18/ Mechanical sweeping: heavy residential downtown areas, once a week; other areas, once every two weeks; outlying areas, once every five weeks.

various calculations. The relatively high volume of 16 tons per crew per day is partially explained by the nominal waste generation rate of forty-three pounds per unit per week, the zone collection system, and the fact that collection is performed over a four day week. Each crew averages 639 stops per day and collection occurs over a four-day period. The collection costs per residence and per person are not unusual as they represent composit costs for mixed refuse, bulky items, dead animal collection, and the cost of the bags. Collection costs per ton per year are relatively high, as such costs generally run in the range of $10 to $15 per ton for similar systems. The city does, however, have a large administrative staff (for customer service personnel receiving requests for bulky item service, bag delivery and missed collection calls/for staff to administer contractors) and a costly fringe package.

5.1.2: Bulky Item Collection

Duties and Level of Service

A separate set of from three to five crews collects bulky wastes on a continued basis. Each crew consists of one driver and one helper using 16-foot flat bed trucks equipped with hydraulic liftgates and a bed hoist, of which the city owns three and rents two on an as-needed basis. Bulky waste, which is heavier than 65 pounds, too large for a packer truck, but manageable by two men, is collected upon receipt of a call requesting such service. Bulky items must be placed at curbside for collection. (See Appendix E for relevant regulations.) Approximately 15,000 requests for pickups are made each year.

Manpower and Equipment Allocations

Two drivers and two laborers are assigned to this operation on a normal four-day per week basis. Additional personnel are added when required by volume of requests. Table 4 presents the manpower and equipment allocation for bulky item collection.

The normal crew is two men, both of which work during a pickup. As stated, 16-foot flat bed trucks are used. From three to five trucks per day are used, with summer volume requiring five truck operations. Each zone depicted in Figure 10 is picked up by the bulky item crews in one day. Routes are based on the distribution of requests for service.

White Goods Schedule Effective 10/30/72

Monday

All areas north of river
and from river to Indep. Ave.

Tuesday

State Line to Prospect
Indep. Ave. to 75th St.

Wednesday

South of 75th St.

Thursday

Prospect to city limits
Indep. Ave. to 75th St.

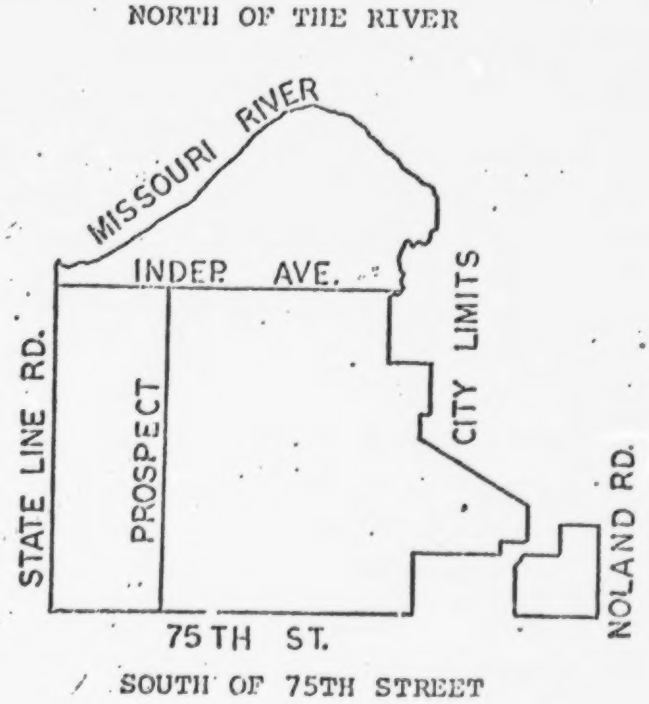

NORTH OF THE RIVER
MISSOURI RIVER
INDEP. AVE.
CITY LIMITS
STATE LINE RD.
PROSPECT
NOLAND RD.
75TH ST.
SOUTH OF 75TH STREET

FIGURE 10: BULKY ITEM COLLECTION

Efficiency and Productivity

Bulky item trucks make from 3 to 4 trips per day to the disposal sites, with an average one-way distance of from 6 to 7 miles. Crews work a 10-4 work week. Tons per crew per day are one-third that of the mixed refuse collection, and the number of stops per crew per day average about 30. The lower crew productivity results from both the unscheduled (on request) nature and the longer length of time required for service of a bulky item stop.

5.1.3: Ash and Dead Animal Collection

Duties and Level of Service

No special collections are made for ash collection. Ashes are generally placed in mixed refuse bags, or in boxes or appropriate containers, and are collected along with the mixed refuse on a weekly basis.

Dead animal collection is also a function of the Refuse Division. Dead animals, of a reasonable size, are collected on request, and the city is covered on a daily basis.

Manpower and Equipment

Dead animal collection is performed by two men, working a staggered work week, each using a pickup truck equipped with a six foot by three foot by eight foot metal box and a hoist. On Friday, the extra man collects any missed mixed refuse stops carried over from the preceding day. Large animals are collected by private haulers under direct contract to the resident.

5.1.4: Street Sweeping

Duties and Level of Service

Street sweeping and flushing operations are the responsibility of the Street Maintenance Division of the Department of Public Works. The central business district and heavy residential areas are swept once per week. Areas which consist of single family units and suburban-type areas are swept every other week. Outlying suburban-type areas are swept once every five weeks. Street cleaning operations are run on a Monday through Friday schedule from 7.30 a.m. to 4.00 p.m., and, on the average, six hours of actual sweeping time occur for each sweeper. Currently, flushing is done only in problem areas and construction sites.

Five years ago, budget cuts reduced sweeping efforts by 50 percent. The FY 73 budget cut another 23 percent from operating funds. Route scheduling was quite difficult originally; only dry sweeping is performed when temperature drops below 34°F. No sweeping is done at temperatures below 25°. Weather caused the loss of 36 out of a potential of 260 work days during the past year. Routes are currently 16 to 18 street miles in length, including 1,250 street miles or 2,700 curb miles. Up to 60 percent error was encountered in the performance of some routes until revised schedules were devised. In actuality, the sweeper operators now set up their own routes. At the end of the current four-year equipment lease contract, if not before, the city may contract out the entire operation.

Manpower and Equipment

Eighty-seven men are used to operate the street cleaning equipment and support equipment. Eighteen sweepers (13 three wheel and 5 four-wheel) are used, each manned by one man. The sweepers are leased and maintained under contract for a cost of $17,555 per month and the lease is renewable for four years. A separate contract is being used for the supply of brooms. Street sweeping operations are supported by four support trucks to pick up sweepings, each manned by two men. Two vacuum machines with three-men crews are leased for eight month periods. Finally, six street flushers, each with a one-man crew, are operated. On an average day, fourteen loads of street sweeping refuse are disposed of. Annual collection volume is approximately 35,000 cubic yards.

Of the operation's manpower, twenty-six men are paid for by the Emergency Employment Act, which will expire in June, 1974.

Of the 83 men used for street cleaning, there are: 3 General Foremen; one clerk; 9 Labor Foremen; 34 Equipment Operators; and 36 Maintenance Workers (laborers).

Currently, sweeper loads are left at fourteen dump sites for pick-up by support trucks, leading to public relation problems. Leaves are raked into streets and Park Department vehicles are used for leaf pick-up on Saturdays. A total of 700 to 800 cubic yards are swept up every week.

5.1.5: Contract Mixed Refuse Collection

Duties and Level of Service

Appendix G presents the "Specifications and Contract Documents for Refuse Collection Routes" used to solicit bids from private haulers on an annual basis for the collection of 66,800 residential stops. The city is now in its third year of contract operation and, while it has taken bids for collection/disposal, bag delivery, and bulky item collection, it now contracts only for collection/disposal services and for bag delivery in selected semi-rural areas.

Appendix H presents the bid history for each of the three years for each of the routes put up for bid. As is apparent, the average bid on a per-stop basis has decreased each year. Payments are made on a monthly basis to all contractors. Contractors are required: to have bid bonds, performance bonds, auto and liability insurance; and, to indemnify the city from any legal action resulting from contractor operation. Contractor service for mixed refuse is essentially the same as the city service.

Service provided is once per week and all residences must use plastic bags for mixed refuse. Contractors begin operation after 7 a.m., and are required to collect from city facilities (fire stations and city hall annexes), when directed, at the same cost per unit as their residential bid. Collection zone schedules must be submitted within ten days of contract award for city approval. Contractors receive complaints from the Refuse Division and must correct complaints within 24 hours or on Saturday, if complaints are received on Friday.

Manpower and Equipment

No information was available to describe the manpower and equipment used by the private contractors. At the time of bids, the city request information to determine that each bidder has sufficient manpower and equipment to adequately service routes for which he has bid. Only one contractor, who has one smaller route (No. 6), works a four-day week. All others work five day schedules. Table 6 presents the number of stops, cost per month per stop, and annual costs for the contract routes.

Contractors must dispose of their collection either at their own sites or at other public or other private sites (and pay disposal fees). The city no longer permits its contractors to use the city landfill but, when it did, the contractors paid disposal fees.

Efficiency and Productivity

Table 5 also presents some minimal data for the private sector contractors. The total cost per year shown includes an allocation for the cost of plastic bags required for their portion of the mixed refuse collection. The costs for contract collection are of the same magnitude as for the city operation if the city collection of bulky items and dead animals is discounted from city costs. The average collection cost per unit per year is $25.83 and the cost per ton is $22.08. Data on crew size, number of days worked, total crew, wage costs and stops per day were not available. As previously noted, the city and private sector tend to compete informally for routes;

TABLE 6:
SUMMARY OF PRIVATE HAULER STOPS AND COSTS

Route No.	No. of Stops	Cost Per Month	Annual Cost
1	3617	$1.89	$ 82,034
2	2351	1.53	43,164
3	2546	1.53	46,744
4	3123	1.48	55,464
5	3123	1.48	55,464
6	2306	2.04	56,450
7	2743	1.24	40,855
8	2539	1.24	37,780
9	2686	1.38	44,480
10	2679	1.38	44,363
11	2896	1.38	47,957
12	2840	1.38	47,030
13	2440	1.38	40,406
14	2984	1.38	49,415
15	2534	1.38	41,963
16	2542	1.38	42,095
17	2517	1.38	42,675
18	2786	1.38	46,136
19	2641	1.38	43,735
20	2043	1.38	33,832
21	1420	1.75	29,820
22	2529	1.38	41,880
23	2497	1.38	41,350
24	2619	1.38	43,371
25	2435	1.24	36,233
TOTAL	65,496*	$1.44 (average)	$1,134,697

* Actual number of stops has increased to approximately 66,000 since bids were taken.

if a private collector can collect a route more efficiently at a lower cost, the city is under strong pressure to put that route up for bid. Thus, it may be assumed that city and private hauler costs per unit are very close on the average.

5.2: Quality of Service

The Refuse Division handles all complaint calls for both city and private contractor operations. Four Customer Service Representatives handle all incoming calls. City complaints are corrected within twelve hours and private sector complaints within twenty-four hours. Telephone calls are cataloged into the following areas:

Missed Pickups
Follow-up on Missed Pickup
Missed Bag Delivery
Follow-up on Missed Bag Delivery
White Goods Pickup Request
Day of Pickup (Request for Information)
Day of Bag Delivery (Request for Information)
Must Bags Be Placed at Curb (Request for Information)
Will We Empty Can or Take Bags From Can (Request for Information)
Dog/Animal Problems
Home Association Calls
Miscellaneous

Appendix I contains a summary sheet of missed collection data. In general, the number of monthly misses per thousand collections city-wide now average about one call per thousand stops, about half the average of one year ago. Contractors have higher miss rates than do city forces, but they too have rapidly improved over the last year of operation. City service complaints are radioed to district foremen. Private contractor complaints are given to each contractor at the end of the day. Complaint response appears to be excellent, and the complaint rate is relatively low.

Each quarter, the Department of Public Works conducts a telephone interview survey of from 250 to 350 residents selected on a random basis. Appendix J presents a tabulation summary of data for four such surveys. While 70 percent of the respondents prefer to place solid waste at the curbside, some 86.7 percent currently perform this operation: twenty-three percent object to doing so. Preference for use of bags declined 96.7 percent in April, 1971, to 87 percent in December, 1972. Only 67.8 percent said they were getting enough bags (ten per dwelling unit per month) and 80 percent said they used three bags or less per week. Less than 6 percent said their service was unsatisfactory and only 3.5 percent identified missed collection as a problem. Ten percent said late collection was a problem, down from 56 percent in July, 1971. Approximately 40 percent of the respondents had some problem with dogs breaking into the refuse storage bags.

As far as collection operations are concerned, the city has certainly taken a strong service-improvement oriented approach. Missed collections have decreased, problem correction is rapid, and citizen approval of service has been maintained at a 95 percent level, at least in terms of the random sample of survey respondents. Litter was not identified as a problem. Street sweeping operations, however, are apparently inadequate and receive relatively low priority.

5.3: Labor-Management Relations

The nature and history of the city's relationship with Local 500 of the AFSCME was discussed in detail in Section 4.4.5 of this report. In general, the union has an excellent working relationship with the city and has achieved a series of improvements for the classified (blue collar) workers it represents. Perhaps the major future change in the area of city-union relationships will be the eventual modification of City Ordinances to permit the city to enter into legal and binding negotiations and contracts with the union.

All city employees who complete a six month probation period become permanent employees. A merit system based on eligibility and examination serves as a basis for promotion of classified personnel.

The absence of a formal civil service system has not negatively affected city employees as the city system is comparable to civil service systems. Table 7 presents the employee fringe benefits which are essentially the same for all categories of classified personnel. In addition, uniforms and safety shoes are provided to all foremen, skilled, and unskilled laborers.

As is evident from tenure data (Table 8), a significant portion of the work force has been with the division for more than five years. The work force appears to be relatively stable and turnover is not a major problem. If the number of skilled and unskilled workers with less than one year of tenure represents the annual turnover rate, then the value in Kansas City for these categories alone is only 8.1 percent, which is very low for blue collar workers. In Kansas City, the problem appears to be the reassignment of personnel as the labor force contracts, due to increasing efficiencies, closing of landfills, and, eventually shifts to one-man trucks.

Absenteeism was noted as an occasional problem. No data were available to indicate the effects of the improved fringe package or the 10-4 work week on absenteeism. The annual average number of sick days taken by the skilled and unskilled employees was six.

TABLE 7:
EMPLOYEE BENEFITS

Benefit	Percentage Paid by Employer or Employee
Medical/Surgical	City pays 100% for employee: he pays increment for family coverage (basic and Major Medical)
Sick Leave With Pay	8 hours/month or 12 days/year
Paid Holidays	9 days (1 day of undesignated holiday at employee choice)
Paid Vacation or Leave	Less than 5 years - 10 days/year 5 to 15 years - 15 days/year More than 15 years- 20 days/year (accruable up to 1½ times annual leave allowance)
Retirement or Pension Plan	City pays 7.38% of gross payroll
Group Life Insurance	City pays for $3,000 coverage; Employee can add up to $500 over annual salary of term insurance at his own cost
Workmen's Compensation	City pays 100%/employee option to participate
Credit Union	Yes
Educational Benefits	City pays 75% of tuition if employee is sent for instruction

TABLE 7: (Continued)

EMPLOYEE BENEFITS

Benefit	Percentage Paid by Employer or Employee
Personal Leave	-For participation in training courses -Up to 3 days of emergency leave
Military Leave	Restoration to job if application is made within 6 months return
Jury Duty	As required
Safety Incentive Awards	-Team and individual competition for least number of accidents over six month period: each member gets $20 award -Each man without injury for six months gets 1 day of additional leave
Tenure Awards	Employees with more than 5 years of service without salary increase for 13 months and at last step of range may receive a one step pay increase

TABLE 8:

TENURE DATA
(Refuse Division)

Years	Managerial	Clerical	Supervisory Foremen	Skilled*	Unskilled*
0-1		2	2**	1	8
1-2		1	1**	6	8
2-3	1	1	1**	5	6
3-4		2		2	14
4-5	1	2		1	2
5-6	1	1		7	5
6-7			1	1	4
7-8	1			3	
8-9				3	
9-10	1	1		2	4
10-11				2	
11-12					1
12-13	1				1
13-14			1**	3	2
14-15				1	
15-16				1	2
16-17				2	
17-18				1	3
18-19					5
19-20		1		1	1
20-	1			2	1
Total	7	11	6	44	67

---

[*] Numbers do not match organization chart and other tables due to out of date data sheets.

[**] Denotes time in position and does not include prior service in skilled positions with city.

In 1972, the work force suffered the following employee injuries:

Sprains	- 13
Bruises	- 10
Cuts	- 7
Pulled Muscles	- 5
Foreign Substance in Eye	- 4

The total of fifty-two injuries resulted in 20 lost man-days and a medical cost of $806.00. There were no permanent injuries. The Refuse Division has instituted a program of Safety Incentive Awards as noted in the Table of Employee Benefits. No data were available to assess the impact of this program on injury rates or distribution. Injuries have not been a major issue in labor-management negotiations.

5.4: Inner City

As previously discussed, inner city areas have had severe clean up problems associated with the 1968 civil disorders and with refuse collection in general. The overlapping support of Federal Interim Assistance and Model Cities funds were used to provide additional service to these areas and to conduct two of the city's three experiments in use of plastic bags for mixed refuse storage.

5.5: Disposal Methods

Disposal in Kansas City has historically been entirely landfill in nature. Lack of cover material, difficulty in finding politically acceptable site locations, flood plain flooding potential, and increasing citizen reaction to disposal system proposals are all problems which were discussed in depth in Section 4 of this report.

Currently, the city is using three sites for disposal of city-collected refuse. The Chouteau site, located on land bought by the city from the Milwaukee Railroad for $135,000 in 1971, now is limited to acceptance of only city-collected refuse.

Under this restricted form of operation, it will accept mixed refuse, bulky waste, trees, street sweepings, and sewage grit collected by city forces. Volume is expected to range from 1,400 to 1,700 tons per week. Employees at the site have been reduced to eight, and its remaining lifetime is expected to be one-half year (45,000 tons).

The second site used by the city is the MARC demonstration landfill, located in Kansas City, Kansas. The city now expects to deliver from 100 to 200 tons per month to this fill, which is owned and partially funded by Kansas City, Kansas but operated under contract by Browning-Ferris Industries. This fill is expected to remain open until January, 1975.

The third site used by the city is the southeast fill, owned by Wolf Enterprises, Inc., and operated under contract by Browning Ferris Industries. Its remaining lifetime is approximately five years.

Figure 11 presents the locations of the three disposal sites (MARC, Chouteau, and Wolf) used by the city forces. As is apparent, the three sites are the ones closest to the central city area collected by the city.

In Fiscal Year 72-73, the city accepted and disposed of 291,950 tons of refuse and bulky waste at its three operating fills. This included waste from private sector haulers, Parks, the City Market, Mayor's Environmental Summer and Safety Clean-up Program, and autos/trucks/trailer loads, and the Pollution Control Department. Two fills were completed (Blue River Road and Raytown Municipal Farm) in May and August of 1972. Disposal volume at the new Chouteau site was averaging about 5,000 tons per week, prior to going to a restricted operating level to extend the fill lifetime. As is evident from Table 9, during Fiscal 72-73 the city operated disposal sites generated over $417,000 in gross revenues from the disposal of over 225,000 tons of commercial and other fee-paying disposers.

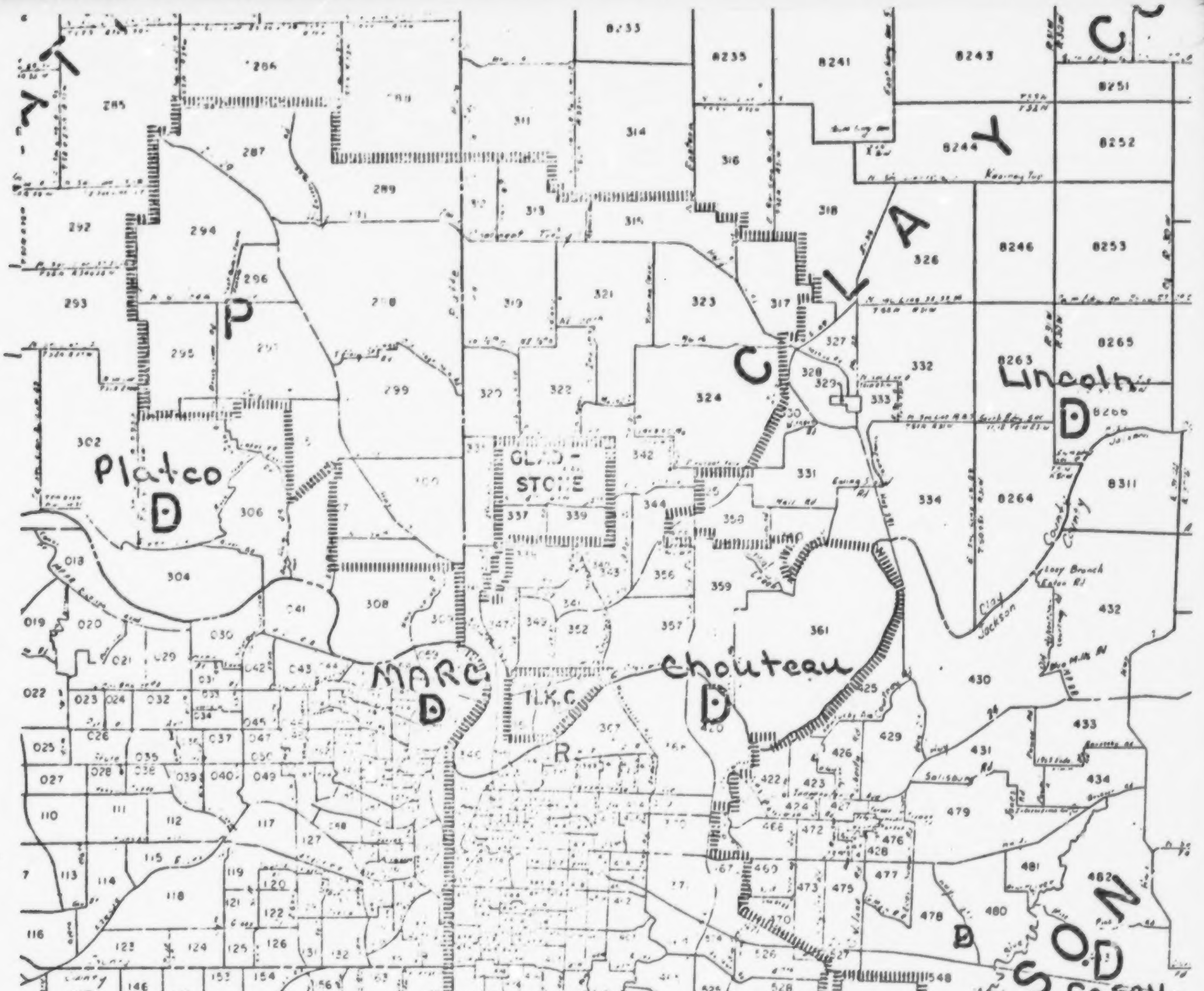

CLAY
Platco D
P
GLAD-STONE
Lincoln D
MARC D
N.K.C.
Chouteau D
R
JACKSON
O.D
Casey
D
RAY-TOWN
Wolf D
INDEPENDENCE
GRANDVIEW
LEE SUMMIT
P

FIGURE 11: DISPOSAL SITE LOCATION FOR CITY OPERATIONS

TABLE 9:

SOLID WASTE DISPOSAL SUMMARY FOR FY '72-'73

	Closed 7/1/72 Chouteau (Old)		Opened 7/1/72	Milwaukee	(New Chouteau)	Municipal Farm	96 & Blue River	TOTALS
	1st Shift	2nd Shift	1st Shift or Scale	2nd Shift of Scale	2nd Scale 3d Sh	Closed 5/27/72	Closed 8/14/72	
Pay Entries: Automobiles	82	106	437	244	65	123	260	1,317
Trucks & Trailers	5,223	5,630	32,612	25,667	5,133	4,237	11,815	90,317
Free Entries: Cover Dirt	0	0	2	187	10	85	92	376
Refuse	529	1,116	5,213	5,106	1,335	958	1,216	15,473
Pollution	39	14	443	269	17	0	0	782
City Market	42	24	148	38	4	0		256
Parks	3	0	5	6	6	0		20
Mess			186	355	266	0		807
Fee Income: Cash	$15,314.10	$16,133.25	$106,237.94	$83,393.75	$15,200.05	$10,628.50	$30,066.35	$276,973.94
Credit	9,224.65	7,073.80	43,206.60	35,029.90	8,044.25	5,294.00	33,094.65	140,967.85
Total Fees	24,538.75	23,207.05	149.444.54	118,423.65	23,244.30	15,922.50	63,161.00	417,941.79
Deposit	15,320.35	16,150.95	105,277.20	82,357.52	15,203.75	10,630.65	30,027.31	274,967.73
Coupons			846.00	936.00				1,782.00
Short - Long	+ 6.25	+ 17.70	- (114.74)	- (100.23)	+ 3.70	+ 2.15	- (39.04)	- (224.21)
SITE	REFUSE (Tons)	STREETS	PARKS	MESS	POLLUTION	CITY MARKET	COMMERCIAL	TOTAL TONS
Chouteau	4,473.465			Mayor's Environm'l Summer & Safety Clean-Up	Control Dept. Grit		40,240.600	47,814.065
Raytown Rd.	4,984.840						7,961.250	12,946.090
Blue River Rd.	6,389.655						31,578.785	37,968.440
Milwaukee	52,057.705	18,720.021	1,616.415	1,130.870	4,433.435	1,046.640	145,556.220	224,561.306
83rd & Indiana	6,345.105							6,345.105
Kansas City, Kan.	4,012.928							4,012.928
Independence	81,902.240	18,720.021	1,616.415	1,130.870	4,433.435	1,046.640	225,436.855	334,236.476
TOTALS	81,902.240	18,720.021	1,616.415	1,130.870	4,433.435	1,046.640	225,436.855	334,286.476

Under the restricted operating program, the one city site (Chouteau) operates with eight men: an Area Superintendent for Disposal; two fee collectors; three operators; and three laborers. Equipment includes: two D-8 bulldozers; one standby loader; one fifteen-yard scraper; one grader; one water truck; one radio-equipped pick-up truck; one Ford farm tractor for litter collection; a toll house and scales; and, an air compressor. No salvage operations are performed at the disposal site.

The current Chouteau landfill site consists of thirty-two acres, most of which have been filled since its opening in July, 1972. The site is filled by the area method in which an area is excavated ahead of the current trench for cover material. Cells are not very deep. A twelve-inch perforated underdrain pipe system is installed to allow collection of any leachate. Leachate monitoring stations have not yet been built. The working face is very large, resulting in some litter or blowing of light materials. The fill is covered regularly and there is no evidence of birds, rats , or other animals but insects are present. There is no fence or ditch around the site. The site borders the levee.

The MARC landfill site is a very neat operation with minimal exposure of refuse. The fill has been covered daily with one foot of cover on top and six inches on the side. A three foot final cover is used. The site is now running out of cover material, so minimal cover is now being used. There is no odor, even downwind of the working face. Ten to fifteen foot deep cells are being well-compacted and the fill is very stable. The fill is fenced completely and is surrounded by a drainage ditch. Monitoring wells are in place. An optimistic estimate of fill-termination is January, 1975.

As has been discussed in Chapter 4, the city is now seeking to select a new disposal site from among the three to five sites finally located by the city's working task force and the Citizen's Advisory Committee on Solid Waste. The city and MARC have cooperated in developing refuse waste generation projections (see appendix K for equations and data) which will also be used in the solid waste plan required by the State. The summary of these projections is presented in Table 10.

TABLE 10: SUMMARY OF TOTAL WASTE
GENERATION PROJECTIONS FOR KANSAS CITY (TONS)

	Sector		
Year	Residential	Commercial	Total
1973	211,186	264,651	475,837
1975	216,550	279,722	496,272
1980	230,514	319,602	550,116
1985	258,343	353,240	611,583
1990	288,436	389,473	677,909
1995	320,918	428,480	749,398
2000	355,968	470,469	826,437

The nature of the city's solid waste disposal system is evident from these data. By the year 2000, the city will have to dispose of a 68 percent increase in residential refuse and a 77 percent increase in commercial refuse. If landfill is the only current and foreseeable disposal methodology, the city and private haulers face an enormous problem in securing adequate and acceptable landfill sites.

5.6: Equipment Description

The Refuse Division of the Kansas City Department of Public Works operates a relatively uniform fleet. Table 11 presents a description of current fleet data for refuse collection operations. The mixed refuse crews use the older 1967 18-yard packers and the six newer 25-yard packers. Bulky item crews use the flat bed trucks.

At this time, the city is expanding its refuse fleet by the purchase of four new 25-yard packers with F-800 Louisville Ford Convertible Cabs, two with Leach 2-R packer bodies and two with Cobey packer bodies. Also, the city plans to replace the chassis of the three 1969 Leach 2-Rs, which were bought used. Before the Council for approval are leases for experimental trial of two, one-man crew packers, a 29.2 cubic yard Shu-Pak and a Gulf MBR. The city wants to try out the one-man packers before they replace their aging 1967 fleet of thirty Garwoods and Pak Mors.

5.6.1: Financing, Cost and Equipment Replacement

The existing fleet is replaced by use of the depreciation charges accumulated in a revolving fund. Replacement expenditures do not have to be budgeted. Replacement decisions are made by upper management of the Department of Public Works Budget Office personnel, and Motor Vehicle Maintenance Division Superintendent. The MVMD puts out bids and purchases the equipment. The Refuse Division essentially leases the equipment from the MVMD at the rates indicated in Table 11. For additional equipment purchase, Council approval of supplementary budget requests is required. Old vehicles are sold at auction.

TABLE 11:

COLLECTION FLEET DESCRIPTION AND OPERATING COSTS

No. of Trucks	Model	Truck	Body	Rental Rate	Gasoline and Oil	Total Repair (Parts & Labor)	Insurance	Overhead	Depreciation	Misc.	Total
12	1967	White 1/	Garwood	\$6.56/hr.	34,121.25	165,912.34	2,867.70	104,752.00	46,076.36	595.00	354,324.65
18	1967	White 1/	Pak Mor	\$6.56/hr.							
3	1969	Chevrolet 2/	Leach	\$6.00/hr.	6,643.58	34,315.45	801.78	20,102.09	17,261.01	105.00	79,228.91
3	1971	White 2/	Cobey	\$6.00/hr.							
3	-	-	16 foot Flatbed	\$1.75/hr.	8,187.01	4,074.10	467.00	3,020.25	3,377.40	-	19,225.76
7	-	-	Pickup	\$0.12/mi.	15,631.59	27,054.88	6,728.90	24,227.87	18,770.05	16.10	92,429.39
2	-	-	Dead Animal Truck	-	-	-	-	-	-	-	-

1/ 18 cubic yard packer trucks

2/ 25 cubic yard packer trucks

For the older packer trucks, labor represents about 43 percent of the total of labor and parts expenditures. For the 25-yard packers, labor represents about 46 percent of this total. On a per truck basis, the 1972-'73 repair costs were $5,530 for the older trucks and $5,719 for the newer, larger trucks. On a per truck basis, the average total per truck costs were $11,811 for the older trucks and $13,205 for the 25-yard trucks. Since the city essentially operates only twenty of the thirty older trucks, the average annual repair costs for these older trucks may be as much as 50 percent higher, if no work was done on the standby equipment. The repair costs in Table 11 include internal parts and labor, external repair costs, accident costs, and towing and lease replacement costs; thus, the average repair costs may be slightly inflated. Annual repair costs are in the range of five to six thousand dollars per truck, the rate is high but not uncommon for a fleet that is six years old.

The 25-yard trucks are depreciated on a five year depreciation schedule and the 18-yard trucks are depreciated on an eight year schedule. The original 1955 fleet was depreciated on an eight year schedule and replaced after thirteen years. Straight line depreciation is used. Equipment rotation is not practiced to equalize true depreciation.

5.6.2: Vehicle Maintenance Policies

The Division of Motor Vehicle Maintenance of the Department of Public Works provides maintenance services for the Refuse Division vehicles. It performs both the preventive maintenance and repair maintenance needed for these vehicles.

The preventive maintenance system encompasses three levels of service. Level A, done every 30 days, includes 32 specific check points, e.g., oil change, grease and lubrication, lights check, etc. Level B, performed every sixty days, includes all the items covered in Level A, plus an additional 12 items, e.g., oil filters, brake adjustments, tire changes, etc. Level C, performed quarterly, includes A and B service, plus an additional 12 items such as alignment and suspension checks, brake drums and linings, hydraulic pressure system, packer chain check, and general tune-up. After each servicing, a road test of the vehicle is performed.

All preventive maintenance work is done on the second shift, from 11:30 p.m. to 8:00 a.m. Daily repair work is performed on the first shift, from 3:30 p.m. to 12:00 midnight. The Refuse Division garage conducts its own preventive maintenance work, while repairs may be done at any of six city garages. For breakdowns, a service truck is on-call for all sanitation vehicles, while two other trucks, which service all city operated vehicles, are available for tire problems.

Currently, there are thirteen employees in vehicle maintenance work for all sanitation vehicles. These include one heavy equipment foreman, two auto mechanics, two auto servicemen, one equipment operator, and seven heavy equipment mechanics. The work week is five days - eight hours, although extensive overtime is presently required. Although delays are not a serious problem, an inability to obtain parts often results in a delay of one to ten days.

The division is currently experimenting with automatic lubrication systems, which would entirely eliminate the need for periodic lubrication. Also, it has conducted a year-long experiment with foam-filled tires in an effort to reduce the number of flats. To date, this test has proved quite successful.

In addition, an agreement has been made with Kansas City Junior College to provide in-service training and instruction on heavy equipment maintenance.

5.7: Financial Reports of the Kansas City Solid Waste Management System

Kansas City operates on a unconventional May 1 to April 30 fiscal year. Well in advance of the beginning of the fiscal year, each department prepares estimates of its program operations and budget requirements on standard forms distributed by the Budget Division of the City Manager's office. These estimates are reviewed and compiled by the Budget Division, and presented to the City Council by the City Manager. By the third Tuesday in April, the City Council must have finished its review, and approve the budget either as submitted, or with revisions. This, the adopted budget is in place at the initiation of the fiscal year and department heads face no uncertainty about the exact amount appropriated for each program activity. During the fiscal year, a supplemental budget is prepared, detailing areas for expanded services and estimated costs. If additional monies are available the City Council may approve these additional program activities (see Appendix L for 1973-74 supplemental budget).

The Budget Division monitors the expenditure patterns throughout the fiscal year, primarily by means of a formal quarterly budget report. An analysis of appropriations, expenditures to date, and projected yearly expenditures is prepared. The results are reviewed in a formal meeting with each department head and budgetary adjustments are made as required.

The city has moved to utilize the program budget approach to budget development in the last fiscal year, moving away from the line-item, accounting budget. In addition, it has allocated its indirect administrative costs, termed "support costs," to direct program activities for the last two fiscal years, in an effort to identify all the real costs of each program activity.

5.7.1: Sources of Revenue

All operations of the solid waste management system are financed out of the General Fund. Several revenue sources are utilized for the General Fund, the major ones being: earnings and profits taxes; licenses permits, and franchises; and property taxes, which together accounted for 86 percent of all revenues for the General Fund in the 1973-74 budget. No revenue source in the General Fund is earmarked for a specific program or department; all appropriations are made from the General Fund without reference to revenue source.

However, a portion of the revenues received from the earnings tax may be regarded as a direct source for the solid waste management operations. In December, 1970, voters approved an increase in the earnings tax from one-half percent to one percent. This increase was authorized with the public understanding that a portion of the additional revenues would be used, among other things, to allow the city to initiate a city-wide mixed refuse collection service. Of the anticipated $15.5 million in additional revenues, $3.6 million was committed to cover the cost of both the existing solid waste operations and the expanded solid waste collection service. As required by the authorization, the city-wide service had to begin within 90 days. On March 1, 1971, the expanded service was initiated.

Table 12 presents the General Fund Account and the major revenue sources that relate to the solid waste management system for the previous six years. As shown, the revenues available in the General Fund Account have grown by more than $34 million during this period, a 69.4 percent increase. Much of this growth is accounted for by the earnings tax,

TABLE 12:
GENERAL FUND ACCOUNT, AND REVENUE SOURCES FOR SOLID WASTE MANAGEMENT SYSTEM, KANSAS CITY, MO., 1968-69 to 1973-74

	General Fund	Earnings and Profits Tax	Landfill Use Charges	Sanitation Permits and Fees	Federal Revenue Sharing	Emergency Employment Act	Model Cities
1973-74	$83,662,038[1]	$33,837,659[1]	$ 73,800[1]	$ 24,350[1]	$66,600	$4,063	---
1972-73	$81,093,442[2]	$31,873,000[2]	$ 450,000[2]	$ 22,300[2]	---	---	---
1971-72	$75,065,767	$29,106,290	$ 597,427	$ 17,150	---	---	---
1970-71	$59,728,412	$15,832,145	$ 770,109	$ 13,336	---	---	$131,245
1969-70	$55,810,755	$13,487,154	$ 775,728	$ 11,007	---	---	---
1968-69	$49,394,277	$12,469,340	$ 535,107	$ 17,208	---	---	---

---

[1] Budgeted amount, 1973-74

[2] Revised estimate, 1972-73

All other figures are actual revenues received which rose by more than $21 million during the six years. The near doubling of revenues that occurred in 1071-72 reflected the earning tax increase to one percent, authorized at that time.

Both the landfill use charges and the sanitation permits and fees are revenue sources that are available through the operation of the city solid waste system. As shown, the revenues from landfill fees decreased dramatically, from a high of $770,109 in 1970-71 to the expected $73,800 in the current fiscal year. This reflects the closing of two city sites and restriction of the remaining city-owned landfill site to only city-collected solid waste. This significant loss of revenues is not likely to affect the operations of the solid waste system since, presumably, other General Fund revenues will be utilized to replace the landfill use charges. However, since the city is now required to pay private landfill owners for disposal rights (until the city decides what new disposal system to adopt) the cost of disposal may become increasingly expensive.

The sanitation permits and fees include the revenues received from private collectors for the rights to operate within the city. As shown, this revenue source has experienced a mild increase in recent years.

In addition to the local sources of revenues, the city has used various Federal funding sources for its solid waste program. The Federal programs that have funded aspects of the solid waste system include: Federal Revenue Sharing; the Emergency Employment Act; and the Model Cities program. Revenue Sharing monies are presently budgeted for the purchase of three additional packer trucks. Emergency Employment Act funds, used to employ additional personnel, were also available in earlier years before 1973-74, but the amounts were not identifiable from available data. The revenues received from the Model Cities program resulted in the experimental plastic bag program undertaken from July, 1970, to February, 1971, just prior to the initiation of the city-wide service.

For financing its capital program, the city uses both debt instruments and a sinking fund. Motorized equipment is now generally depreciated over a five year period; monies accumulated in the sinking fund are then utilized for the purchase of replacement vehicles. During the past year, an $8.45 million bond issue was approved for the acquisition of additional disposal sites. However, the bond has not been issued, awaiting the results of the study committee investigation into appropriate disposal sites.

5.7.2: Expenditures

As mentioned above, the expenditures of the solid waste management division are monitored by the Budget Division, using monthly and quarterly financial documents comparing appropriations and actual expenditures to date.

In Table 13, the expenditures for the collection and disposal activities for the previous six years are summarized. Of note is the near doubling in expenditures for collection that occurred in 1971-72 when the city adopted the city-wide collection program. Since that time, expenditures for collection have increased at a relatively slow pace, rising about $100,000 in 1972-73, and an additional $350,000 in the 1973-74 budget. The latter increase does not include the $194,500 budgeted for disposal fees at private landfill sites that were a part of the collection activity in the adopted budget. Since this cost is more accurately a cost of disposal operations, in this analysis it has been re-allocated to that activity. Therefore, since the city-wide service was initiated, collection expenditures have increased at an moderate average annual rate of 4.9 percent.

TABLE 13:

EXPENDITURES FOR REFUSE COLLECTION AND DISPOSAL KANSAS CITY, MISSOURI - 1968-69 to 1973-74

	Collection			Disposal			
	Direct Expenditures	Support Costs	Total	Direct Expenditures	Support Costs	Total	Total Collection and Disposal
1973-74	$4,114,691 1/	$425,204 1/	$4,539,895 1/	$425,960 1/	$30,448 1/	$458,408 1/	$4,998,303
1972-73	3,838,986 2/	373,076 1/	4,212,062 3/	626,078 2/	71,547 1/	697,625 3/	4,909,687
1971-72	3,756,905	369,059 4/	4,125,154 5/	716,208	70,188 4/	786,396 5/	4,911,550
1970-71	1,959,239	192,005 4/	2,151,244 5/	563,754	55,248 4/	619,002 5/	2,770,246
1969-70	1,233,180	120,852 4/	1,354,032 5/	427,191	41,864 4/	469,055 5/	1,823,087
1968-69	1,176,145	115,262 4/	1,291,409 5/	*	*	*	1,291,409

1/ Budgeted amount.

2/ Estimated acutal expenditures.

3/ Sum of budgeted amount for support costs and estimated actual direct expenditures. All other figures are actual expenditures.

4/ Not allocated in years prior to 1972-73, inputed at 9.8% of direct expenditures

5/ Sum of actual direct expenditures and imputed support costs.

* No disposal expenditures reported in 1968-69.

For disposal operations, the closing of the disposal sites is reflected in the sharp decline in expenditures for 1973-74. As noted above, the cost for disposal fees paid to private landfill owners has been re-allocated to the disposal activity to provide a more accurate picture of actual disposal costs. However, the decline of more than 34 percent from the previous year is still recorded. If actual volumes of refuse collection continue on the same level from year to year, than it would seem likely that real disposal costs would be at least as high as in the preceeding year. It would appear that the $194,500 budgeted for disposal fees may be insufficient to cover the actual costs, and that additional funds may be needed by the end of the fiscal year.

In Table 14, the expenditures for the past three years are detailed by object categories. As in the previous Table, the $194,500 charged to the collection activity, under contractual effort in 1973-74 , have been more properly allocated to the disposal activity under the same object category. For the collection activity, a moderate rate of increase is noted for each of the object categories. The disposal activity shows a sharp decline in the personnel and labor costs, and commodities and supplies costs, which is not offset by the additional contractual effort expenditures.

To analyze the nature of the city's solid waste collection operation, the identifiable budget figures pertaining to the private sector operations must be excluded. As shown in Table 15 , the Refuse Collection contracts, the Homeowners Association, and the Plastic Bags expenditures used by the contract collectors, are all budget items that pertain strictly to the private sector collection service. When these items are isolated, the expenditure pattern for the city collection operations can be identified, as shown in Table 16.

TABLE 14:
DIRECT EXPENDITURES FOR REFUSE COLLECTION AND DISPOSAL BY OBJECT CATEGORY, KANSAS CITY, MO., 1971-72 to 1973-74

Collection	1973-74[1]	1972-73[2]	1971-72[3]
Personnel and Labor	$1,413,832	$1,288,717	$1,235,475
Contractual Effort[4]	1,965,234	1,834,260	1,688,710
Commodities and Supplies	735,625	714,250	713,524
Capital Outlay	0	1,757	0
Total	$4,114,691	$3,838,986	$3,837,720
Disposal			
Personnel and Labor	83,160	249,803	280,055
Contractual Effort	248,650	157,080	249,498
Commodities and Supplies	6,150	219,099	75,930
Capital Outlay	0	94	3,900
Total	$ 427,960	$ 628,078	$ 609,384

---

[1] Budgeted amount

[2] Estimated actual expenditure

[3] Estimated actual expenditure (totals do not coincide with final expenditure figures presented in previous table)

[4] Includes contract collection of mixed refuse, as well as vehicle rental expense, Home Association costs.

TABLE 15:

DIRECT EXPENDITURE FOR REFUSE COLLECTION ATTRIBUTABLE TO PRIVATE CONTRACT OPERATIONS, KANSAS CITY, MO., 1972-73 and 1973-74

	1973-74[1]	1972-73[2]
Refuse Collection Contracts	$1,204,021	$1,190,318
Homeowners Association	230,880	210,960
Plastic Bags	(727,000)	(705,444)
(40% for private sector use)	290,800	282,178
TOTAL	$1,725,701	$1,683,456

[1] Budgeted amount

[2] Estimated actual expenditures

TABLE 16:

DIRECT EXPENDITURES FOR REFUSE COLLECTION ATTRIBUTABLE TO CITY COLLECTION OPERATIONS, KANSAS CITY, MO., 1972-73 and 1973-74

Collection	1973-74[1]	1972-73[2]
Personnel and Labor	$1,413,832	$1,288,717
Contractual Effort	530,333	432,982
Commodities and Supplies	444,825	432,072
Capital Outlay	0	1,757
Total	$2,388,990	$2,155,528

[1] Based on budgeted amounts

[2] Based on estimated actual expenditures

Similar to most solid waste collection systems, Kansas City is highly labor intensive; personnel and labor costs averaged nearly 60 percent of total expenditures during the last two years. In comparing the total costs between the private and city operations, it is significant that in serving approximately 60 percent of the dwelling units, the city collection operation incurs about 60 percent of the total cost of collection. It follows, of course, that the private sector serves 40 percent of the dwelling units, at 40 percent of the total cost. Both the city and private sector are operating their collection activities at approximately the same cost per unit.

Street Cleaning expenditures are presented in Table 17. As part of the earnings tax increase in 1971, an incremental $237,600 was allocated to the street cleaning program, a 35 percent increase. This allowed for a 50 percent increase in equipment, with the addition of six street sweepers and four street flushers. However, it was not until October, 1972 that a complete, city-wide street cleaning program could b initiated.

Under the present system, the city has a lease arrangement with Liberty Leasing Company for the supply and maintenance of 18 street sweepers and two vacuum machines, at a montly rate of $17,555. A penalty of $200 per day is assessed for a delay of more than 24 hours in providing all the required number of vehicles. The actual sweeping, pick-up, and disposal operations are performed by city employees. As shown, the cost of operations has decreased significantly, even though the city has attempted to move towards city-wide service. This results from the contractual arrangement that allows for the use of new vehicles, thus reducing maintenance and other costs caused by frequent breakdowns (see Appendix M for detailed cost of operations from October, 1972 to April 1973).

TABLE 17:

EXPENDITURES FOR STREET CLEANING KANSAS CITY, MO., 1968-69 to 1973-74

1973-74	$ 653,988[1/]
1972-73	816,211[2/]
1971-72	1,062,573[3/]
1970-71	808,553
1969-70	954,930
1968-69	680,550

[1/] Based on actual cost of street cleaning operations from October 1, 1972 to April 30, 1973 ($381,493), inflated to 12 month estimate

[2/] Proposed budget amount

[3/] Adopted budget amount

APPENDIX A-1

State Act for Regulation of Solid Waste Services

Reproduced from best available copy.

SECOND REGULAR SESSION

[TRULY AGREED TO AND FINALLY PASSED]

SENATE BILL NO. 387

76TH GENERAL ASSEMBLY

AN ACT

Relating to the regulation and management of certain solid wastes, with penalty provisions.

Be it enacted by the General Assembly of the State of Missouri, as follows:

Section 1. The following words and phrases when used in this act shall, for the purpose of this act, have the meaning respectively ascribed to them in this section:

(1) "Board" means the state board of health;

(2) "City" means any incorporated city, town, or village;

(3) "Director" means the director of the state division of health;

(4) "Division" means the state division of health;

(5) "Person" means individual, partnership, corporation, association, institution, city, county, other political subdivision, authority, state agency or institution, or federal agency or institution;.

(6) "Solid waste" means garbage, refuse and other discarded materials including, but not limited to solid and semisolid waste materials resulting from industrial, commercial, agricultural, governmental and domestic activities, but does not include overburden, rock, tailings, matte, slag or other waste material resulting from mining, milling or smelting;

(7) "Solid waste disposal area" means any area used for the disposal of solid waste from more than one residential premise, or one or more commercial, industrial, manufacturing, recreational, or governmental operations;

(8) "Solid waste management system" means the entire process of storage, collection, transportation, processing, and disposal of solid wastes by any person engaging in such process as a business, or any city, authority, county or any combination thereof;

(9) "Solid waste processing facility" means incinerator, compost plant, transfer station, or any facility where solid wastes are salvaged.

Section 2. 1. After June 30, 1973, it is unlawful for any person to operate a solid waste processing facility or solid waste disposal area of a solid waste management system without first obtaining a permit from the division.

2. Every person desiring to operate a solid waste processing facility or solid waste disposal area shall make application for a permit on forms provided for this purpose by the division and shall provide the division with plans, specifications, and such other data as may be necessary to comply with the purpose of this act. Upon receipt of the application the division shall make an investigation of the solid waste processing facility or solid waste disposal area and determine whether it complies with the provisions of this act and the rules and regulations adopted thereunder. When the investigation reveals that the facility or area does conform with the provision of the act and the rules and regulations adopted thereunder the division shall approve the application and shall issue a permit for the operation of each solid waste processing facility or solid waste disposal area as set forth in the application. In the event that the facility or area fails to meet the rules and regulations adopted pursuant to this act, the division shall issue a report to the applicant stating the reason for denial of a permit.

3. Plans, designs, and relevant data for the construction of solid waste processing facilities and solid waste disposal areas shall be submitted to the division by a registered professional engineer licensed by the state of Missouri for approval prior to the construction, alteration or operation of such a facility or area.

4. Permits granted by the division, as provided in this act, shall be subject to revocation whenever the division determines that the solid waste processing facility or solid waste disposal area is, or has been conducted in violation of this act or the rules or regulations adopted pursuant to the act, or is creating a public nuisance, health hazard, or environmental pollution. In the event a permit is revoked, the person named in the permit shall be fully informed as to the reasons for such action.

5. Each permit for operation of a facility or area shall be issued only to the person named in the application and such permit shall not be transferable. A permit shall become void after notice to the division by the person named in the permit that said person has discontinued operation of a facility or area. The division may revoke a permit after determining a facility or area has not operated for a period of one year.

6. In case a permit is denied or revoked, the person may request a hearing in accordance with section 8 of this act.

Section 3. 1. It is unlawful for any person to:

(1) Dump or deposit, or permit dumping or depositing of any solid wastes onto the surface of the ground or into streams, springs, and all bodies of surface or ground water, whether natural or artificial, within the boundaries of the state except in a solid waste processing facility or solid waste disposal area having a permit as required by section 2; provided, that this provision shall not prohibit the use or require a permit for the use of solid wastes in normal farming operations or in the processing or manufacturing of other products in a manner that will not create a public nuisance or adversely affect the public health, and shall not prohibit the disposal of or require a permit for the disposal by an individual of solid wastes resulting from his own residential activities on property owned or lawfully occupied by him when such wastes do not thereby create a public nuisance or adversely affect the public health;

(2) Construct or alter a solid waste processing facility or solid waste disposal area of a solid waste management system without approval from the division;

(3) Conduct any solid waste burning operations in violation of the provisions of the Missouri air conservation commission or the division;

(4) Store, collect, transport, process, or dispose of solid waste in violation of the rules, regulations or orders of the division or in such a manner as to create a public nuisance or adversely affect the public health; or

(5) Refuse entry or access, requested for purposes of inspecting solid waste processing facilities or solid waste disposal areas, to an agent or employee of the division who presents appropriate credentials, or hinder the agent or employee in carrying out the inspection.

2. No person shall be held responsible under the provisions of this section for the dumping or depositing of any solid waste on land owned or lawfully occupied by him without his express or implied consent, permission or knowledge.

Section 4. 1. Except as provided in subsection 2, each city and each county or a combination of cities and counties shall provide individually or collectively for the collection and disposal of solid wastes within its boundaries; shall be responsible for implementing their approved plan required by section 5 of this act as it relates to the storage, collection, transportation, processing, and disposal of their solid wastes; and may purchase all necessary equipment, acquire all necessary land, build any necessary buildings, incinerators, transfer stations, or other structures, lease or otherwise acquire the right to use land or equipment. Each city and county, including those affected by the provisions of subsection 2, may levy and collect charges for services, and may levy an annual tax not to exceed ten cents on the one hundred dollars assessed valuation, as authorized by article X, section 11(c), of the constitution for public health purposes to implement a plan for solid waste management, and to do all other things necessary to provide for a proper and effective solid waste management system; except that, the county may not levy a service charge or annual tax upon the inhabitants of any incorporated city, town or village that has an approved plan for solid waste management, unless the city, town or village contracts with the county for solid waste management and consents to the county service charge or tax levy. The tax or service charge authorized by this section shall not be levied if the tax or service charge is levied pursuant to some other provision of law, but if a tax is levied for the operation of a sanitary landfill and such tax is less than the maximum amount authorized by this section, a tax in an amount equal to the difference between such tax and that authorized in this section may be levied and collected.

2. The governing body of each county of the first class

containing all or part of a city having a population of four hundred fifty thousand or more and the governing body of each county which has joined with it in forming a regional planning commission shall on or before January 1, 1974, adopt a plan for the disposal of solid wastes generated within its boundaries. The plan for each such county shall provide for a solid waste management system for the entire county, and the system proposed shall not operate in any manner which will contribute to pollution of the land, waters, or air of the state, and shall provide for the safe and sanitary disposal of solid wastes. The plan shall provide a method whereby the solid waste management system will be extended to all areas of the county no later that January 1, 1976, and each plan shall be compatible with any other provision of law and all rules and regulations adopted pursuant thereto which deal with solid waste disposal. The plan shall meet any recommended standards which may be adopted by the planning commission of which the county is a member and shall be submitted to the planning commission for its approval. Each county's plan shall be designed so as to provide a unified plan for the entire area covered by the planning commission. Any plan so adopted must be approved by the state division of health in accordance with other provisions of this act.

3. Any city or county may adopt ordinances, rules, regulations, or standards for the storage, collection, transportation, processing or disposal of solid wastes which shall be in conformity with the rules and regulations adopted by the board for solid waste management systems. However, nothing in this act shall usurp the legal right of a city or county from adopting and enforcing local ordinances, rules, regulations, or standards for the storage, collection, transportation, processing, or disposal of solid wastes equal to or more stringent than the rules or regulations adopted by the board pursuant to this act.

4. Cities or counties may contract as provided in chapter 70, RSMo, with any person, city, county, political subdivision, state agency or authority in this or other states to carry out their responsibilities for the storage, collection, transportation, processing, or disposal of solid wastes.

Section 5. 1. On or before June 30, 1974, each county and city shall submit to the division an officially adopted plan for a solid waste management system or systems serving areas within its jurisdiction and shall, from time to time, submit such revisions of said plan as it deems necessary or as the division may require, but this provision shall not prohibit cities and counties to contract as provided in chapter 70, RSMo, for development and submission of a joint plan or to authorize their respective regional planning commission to develop and submit the required plan.

2. Every plan shall:

(1) Delineate areas within the jurisdiction of the political subdivision where solid waste management systems are in existence and areas where the solid waste management systems are planned to be available within a ten-year period;

(2) Reasonably conform to the rules and regulations adopted by the board for implementation of this act;

(3) Provide for the orderly extension of solid waste management systems in a manner consistent with the needs and plans of the whole area, and in a manner which will minimize pollution of the waters or air of the state, prevent public nuisances or health hazards and shall otherwise provide for the safe and sanitary disposal of solid waste;

(4) Take into consideration existing comprehensive plans, population trend projections, engineering and economics so as to delineate with practicable precision those portions of the area which may reasonably be expected to be served by a solid waste management system;

(5) Take into consideration existing acts and regulations affecting the development, use and protection of air, water or land resources;

(6) Establish a time schedule and proposed method of financing for the development, construction and operation of the planned solid waste management systems together with the estimated cost thereof; and

(7) Include such other reasonable information as the division shall require.

(8) Allow private solid waste disposal services to continue to operate in unincorporated area of counties so long as such services are operated in a manner consistent with the policies and standards established under this act.

3. The plan shall be reviewed by appropriate official planning agencies within the area covered by the plan for consistency with programs of comprehensive planning for the area, and all such reviews shall be transmitted to the division with the proposed plan.

4. The division may approve or disapprove plans for solid waste management systems submitted in accordance with this act. In the event any plan is disapproved, the division shall furnish any and all reasons for such disapproval, and any city, county, or regional planning commission whose plan is disapproved shall revise and resubmit the plan for approval or request a hearing in accordance with section 8 of this act.

5. The division may provide technical assistance to counties, cities, and regional planning commissions in coordinating plans for solid waste management systems required by this act, including revisions of such plans.

6. The director may institute appropriate action under section 7 to compel submission of plans in accordance with this act and the rules and regulations adopted pursuant to this act.

Section 6. The division shall:

(1) Administer the state solid waste management program pursuant to the provisions of this act.

(2) Cooperate with appropriate federal, state, and local units of government of this or any other state, and with appropriate private organizations in carrying out its authority under this act;

(3) Develop such rules and regulations relating to solid waste management systems for adoption and promulgation, after public hearing, by the board as shall be necessary to carry out the purposes and provisions of this act;

(4) Develop a statewide solid waste management plan in cooperation with local governments, regional planning commissions and appropriate state agencies;

(5) Provide technical assistance to cities, counties, and authorities including the training of personnel;

(6) Conduct and contract for research and investigations in the overall area of solid waste storage, collection, processing, transportation and disposal, including, but not limited to, new and novel procedures;

(7) Issue such permits and orders and conduct such inspections as may be necessary to implement the provisions of this act and the rules and regulations adopted pursuant to the act;

(8) Initiate, conduct and support research, demonstration projects, and investigations with applicable federal programs pertaining to solid waste management systems;

(9) Designate local health departments to act as its agents in carrying out the provisions of this act under procedures and conditions as the division shall prescribe.

Section 7. 1. If the division finds that the storage, collection, transportation, processing or disposal of solid wastes subject to the provisions of this act is in violation of any rule or regulation adopted by the board pursuant to this act or might reasonably be expected to cause pollution of the land, air, or waters of the state or is creating a public nuisance or health hazard, the division may order the person to alter its storage, collection, transportation, processing or disposal systems to correct such violation causing the health hazard, pollution, or public nuisance. Such order shall specify the length of time, after issuance of the order, within which the facility or area shall be repaired, altered, constructed or reconstructed.

2. Whenever it appears to the division that any person has engaged in, or is about to engage in, any acts or practices that have or will constitute violation of this law, or any rule or regulation promulgated thereunder, the director may request, and it shall be the duty of the county prosecuting attorney, or the attorney general, to bring an action in the circuit court to enjoin the acts or practices and to enforce compliance with this law or any rule or regulation promulgated thereunder. In any such action, the court may grant to the division such prohibitory or mandatory injunctive relief as the facts may warrant.

Section 8. Any party aggrieved by the denial or revocation of the permit required by section 2 of this law or any disapproval of the plan required by section 5 of this law, may within thirty days of notice of such action request a hearing. The notice of the division shall be effected by registered mail and shall set forth the reasons for such disapproval, denial, or revocation. The hearing shall be conducted by the director or his designated representative in accordance with the procedures set forth in sections 536.070, 536.073, 536.077, 536.080, and 536.090, RSMo, except that an original record shall be made of such hearing at the expense of the division. A copy of such record shall be made available to the person upon payment of a reasonable charge therefor. The decision of the division shall become final thirty days after delivery or registered mailing of a copy of it to the person. A person shall be entitled to judicial review of a final decision as provided in sections 536.100 to 536.140, RSMo.

Section 9. Any person violating the provisions of this act is guilty of a misdemeanor. Each day of the violation shall be considered a separate violation.

Section 10. A city or county or combination of cities and counties may levy an annual tax as provided in this act only after such tax has been submitted to a vote of the people to be affected thereby and a majority of the voters in each city or county voting thereon have approved same. The county court or city council may submit the question of the proposed tax at a regular or special election by giving at least three weeks' notice in the manner prescribed in chapter 493, RSMo.

The ballot for submission shall be in the following form:

Shall (the City of ...., the County of ...., the City of .... and County of ....) levy an annual tax not to exceed ten cents on the one hundred dollars assessed valuation to pay for a solid waste management system.

For the tax ☐

Against the tax ☐

(Place an X in the square of your choice)

APPENDIX A-2

State Guidelines for Review of MARC Area Comprehensive Solid Waste Management Plans

THE DIVISION OF HEALTH
OF MISSOURI

GUIDELINES FOR REVIEW OF COMPREHENSIVE SOLID WASTE MANAGEMENT PLANS
(For the Mid-America Regional Council Area Only)

Section 4.2. of Senate Bill No. 387 of the 76th General Assembly requires that "The governing body of each county of the first class containing all or part of a city having a population of 450 thousand or more and the governing body of each county which has joined with it in forming a regional planning commission shall on or before January 1, 1974, adopt a plan for the disposal of solid wastes generated within its boundaries. The plan for each such county shall provide for a solid waste management system for the entire county,..." The guidelines contained herein will be used by the Missouri Division of Health to determine approval or disapproval of a county plan and are being provided to the counties and the Mid-America Regional Council to expedite the planning process.

Basically, county solid waste management plans will be reviewed for consistency with (1) Section 4.2. of Senate Bill No. 387, (2) Section 5 of Senate Bill No. 387 which lists eight items to be included in a plan, (3) the goals and objectives of the Missouri Solid Waste Management Plan, and (4) the remaining sections of Senate Bill No. 387, especially 4.1. which states "...each city and county or a combination of cities and counties shall provide individually or collectively for the collection and disposal of solid wastes..." Chapter VI of the Missouri Solid Waste Management Plan lists objectives for storage, collection and transportation, processing and disposal, etc. Chapter VII indicates methods in which the objectives of Chapter VI can be attained. These two chapters contain very valuable information and insight into the recommendations for an acceptable solid waste management system and hence an acceptable solid waste management plan. Solid waste management plans are required simply as a method to attain the end result - a good solid waste management system. Considering this and the fact that the plans, must by law, be implemented, these solid waste management plans should be very practical and easily implementable.

All of the criteria mentioned in the above paragraph will be used, but some of the more important guidelines are as follows:

A. Storage recommendations must provide for:

1. Solid waste containers which provide for complete enclosure of the contents for protection from weather, prevention of scattering and exclusion of vectors and domestic animals.

2. Reusable containers which are durable and cleanable, or single service containers must be durable enough to withstand a single use.

3. Containers to be manually lifted should not exceed 35 gallons in capacity or weigh more than 75 pounds when full.

4. Regular cleaning and maintenance of community containers such as bulk containers used by several families and provided by the local government or private contractor. The frequency required will depend upon the type of waste, the extent of the use of single service bags, the season of the year, etc.

B. Collection and Transportation recommendations should basically assure that all of the solid waste generated will enter the collection system and be transported to a processing facility or disposal area which has a Division of Health permit.

1. In cities, achieving this objective will involve providing the collection service to everyone, not an optional system where the residents choose whether or not to use the service. It has been shown many times that when a uniform collection service is not provided that those residents who choose not to use the service may dispose of the waste in unauthorized areas or allow the solid waste to accumulate on their property, thereby causing a neighborhood problem. In accepting their responsibility for collection and disposal under Senate Bill No. 387, cities must assure that everyone receives the collection service with public forces or by a contract with private enterprise or other public agencies. Recognition must also be given to potential problems of commercial and industrial waste accumulation and city ordinances should have provisions requiring routine removal of such wastes and relative enforcement provisions. Once per week collection would be a minimum unless an unusual waste is involved which does not cause odors, vector breeding and attraction, fire hazards, or unsightliness.

2. In rural unincorporated areas, it is often not economically feasible to collect solid waste on a door-to-door basis, therefore, it would be acceptable to use a container service in these areas with containers conveniently located to assure the use of the containers rather than promiscuous dumps. This type of service could also be used in small incorporated towns in which local factors suggest the container service approach to be the most practical and feasible.

3. Adequate collection frequency is necessary to prevent odor problems, fly and other insect breeding, rodent attraction, etc. A minimum of once per week collection (twice is preferable) must be provided for household solid waste and any other type which contains putrescibles. Community bulk container systems should receive at least twice per week service due to the fact that waste deposited in the containers may already have been stored at the household for a prolonged period of time and therefore the waste may cause fly and odor problems if not collected at such frequencies. If containers are serviced frequestly, there will be fewer problems with containers which could be overflowing for long periods of time without collection.

4. A good household collection service will provide for removal of all of the waste that meets the storage standards and that the collection vehicle can accommodate. Limiting the number of containers or volume that is permitted to be collected defeats the basic purpose of the collection system to remove the solid waste from the residential premises. The plan recommendations should acknowledge how the bulky wastes will be collected and disposed of also.

5. Solid waste collection vehicles must have covered bodies which are leakproof, cleanable and prevent blowing and scattering of refuse. A compactor type body is preferable because it meets this criteria and because more waste can be hauled per trip thus reducing hauling costs and travel time to processing and disposal sites.

6. In some metropolitan areas, backyard burning of household solid waste is a violation of the regulations of the Missouri Air Conservation Commission. Commercial solid waste must not be subject to open burning anywhere in the State. In areas where open burning of household solid waste is not illegal and house-to-house collection is provided or planned, the solid waste plan should recommend prohibiting backyard burning of general household solid waste. This undesirable method of volume reduction is not necessary when a collection service is provided.

C. Processing and Disposal recommendations must provide for processing and disposal in a manner which will not cause public health and safety hazards, nuisances, air and water pollution, degraded land values and unsightliness. To accomplish this will require:

1. Phasing out and properly closing of open dumps.

2. Establishment of acceptable processing facilities and land disposal sites (sanitary landfills) which are located, designed and operated in accordance with rules and regulations developed under Senate Bill No. 387.

3. Recommendations for the processing and disposal of hazardous wastes such as pathological and infectious wastes, poisonous and toxic chemical wastes, dead animals, etc., which are present in the planning area.

4. Consideration of population projections and future solid waste generation. The recommended processing method(s) and disposal area(s) must have the combined capacity to provide for processing and disposal for a minimum of ten years.

D. Management recommendations must provide for:

1. Legal actions to be taken in cities and counties to implement the county plan such as copies of existing or proposed ordinances, contracts, court orders, etc.

2. Appointment of adequate staff and designation of responsibility in the areas of operation, regulation, administration, and future planning.

3. An explanation or chart of where the solid waste management responsibilities lie with respect to local government.

4. The method(s) of financing the system - both capital and operating expenses.

E. A Timetable for Implementation is a very important feature of a workable solid waste management plan. Section 4.2. of Senate Bill No. 387 requires that the county plans shall provide a method whereby the solid waste management system will be extended to all areas of the county no later than January 1, 1976. The timetable must be specific in indicating:

1. The dates by which each legal action will be taken such as adoption of ordinances or court orders, contract letting, etc.
2. The dates by which service will be made available in specific portions of the planning area.
3. The date that personnel will be hired and/or responsibility delegated to existing personnel.
4. The date by which the operational authority will be formed (if the plan calls for establishment of a new management structure not already existing as a city or county government).
5. The longevity of any contracts.
6. The length of time the existing disposal areas can receive the anticipated volume of waste and dates by which action will be taken to acquire new disposal sites.
7. Any other dates significant to the full implementation of a solid waste management system for the entire planning area.

As previously stated, the end result (a good solid waste management system) of the planning effort is the subject of most importance - not the planning itself. Therefore, if the county or the cities within the county have already implemented system(s) meeting the guidelines contained herein, the plan would need only to contain a narrative to that effect with supporting legal documents plus a description of the planned management system for at least a ten-year period. If portions of the system(s) are acceptable and others are not, then a description of the existing system(s) with a timetable for implementing improvements in the remainder of the system(s) would be necessary.

Senate Bill No. 387 requires that the plan be "officially adopted" by the county, therefore, a formal resolution of adoption by the county government must accompany the final solid waste management plan to be submitted. The legislation requires that the plan must be reviewed and approved by both the Mid-America Regional Council and the Missouri Division of Health. Two copies of the plan should be sent to: The Division of Health, Bureau of Solid Waste Management, P.O. Box 570, Jefferson City, Missouri 65101, and also copies to the Mid-America Regional Council. The Division of Health will review the plan and consider the region's comments. If the plan is not approved an explanation of the deficiencies will be furnished.

APPENDIX B

City Council Resolution Postponing Expansion of Municipal Farm Landfill Site

SUBSTITUTE FOR RESOLUTION NO. 41411

A RESOLUTION

ADOPTED

POSTPONING THE USE OF THAT PORTION OF THE MUNICIPAL FARM LYING WEST OF INTERSTATE 435 FOR A SANITARY LANDFILL UNTIL AUGUST 9, 1972.

WHEREAS, by Resolution of the City Council, No. 41312, passed May 26, 1972, the Director of Public Works was directed to postpone for two weeks use of the site until a more definite information is available in the form of an engineering study of the proposed use, and

WHEREAS, on Friday, June 23, 1972, a public hearing was held by Council as a Whole, wherein testimony from residents of the Eastwood Hills Subdivision was received, and

WHEREAS, the City Council, by passing Ordinance No. 41386, June 23, 1972, has placed before the electorate of Kansas City a general obligation bond proposal in the amount of $8,450,000 for the acquisition of land for a sanitary landfill and for equipment for the handling and disposal of solid waste, and

WHEREAS, the voters of Kansas City, Missouri are urged to pass this proposition, NOW, THEREFORE,

BE IT RESOLVED BY THE COUNCIL OF KANSAS CITY:

That the City Manager be and he is hereby instructed to have completed on or before July 28, 1972, a comprehensive evaluation of alternate sites for refuse disposal operations that can be made available for early use and which are feasible in location and are within the fiscal capabilities of the City for acquisition and operation, and

That the City Manager be further instructed to take such steps as may be necessary to preclude land filling operations at that portion of Municipal Farm lying west of Interstate Route 435 until the results of the bond election are known August 9, 1972.

ADOPTED

Authenticated as Passed this
JUN 23 1972
CHARLES B. WHEELER, JR., Mayor
V. Edward [illegible] City Clerk
By George Allen
GEORGE W. ALLEN
Deputy City Clerk

Form 5065 - Law
(05869)

APPENDIX C

Employee Performance Report Form

City of Kansas City, Missouri

EMPLOYEE PERFORMANCE REPORT

1410 812 (REV. 1/72)

White – Personnel
Canary – Dept/Div.
Pink – Employee

Date of Rating: ______________________

Rating Period: From ______________________ To: ______________________

☐ Probationary
☐ Annual
☐ Special
☐ Final

Soc. Sec. No.	Activity	Class	Obj.	Employee Name

INSTRUCTIONS

Evaluate employees performance and behavior to the degree he meets job requirements taking into consideration all factors in the employees performance. Individual factors under each trait should be designated where applicable as (+) high; (✓) average; (–) Low. The overall mark for each trait should be indicated by placing an (x) in the applicable columns labeled Outstanding, Above Average, Average, Below Average and Unsatisfactory. BEFORE RATING YOUR EMPLOYEES, PLEASE REVIEW YOUR RATING MANUAL.

TRAIT			Outstdg.	Above Average	Average	Below Average	Unsat.
Quality of Work	☐ Accuracy ☐ Completeness ☐ Oral expression	☐ Written expression ☐ Soundness of judgement in decisions ☐ Reliability of work results					
Work Output	☐ Amount of work performed ☐ Completion of work on schedule	☐ Physical fitness ☐ Learning ability					
Work Habits	☐ Organization and planning of assignments ☐ Job interest ☐ Attendance	☐ Compliance with work instructions ☐ Observance of work hours ☐ Conscientious use of work time					
Safety	☐ Care of equipment, property and materials	☐ Personal safety habits					
Personal Relations	☐ Cooperation with fellow employees ☐ Personal appearance and habits	☐ Dealing with the public ☐ Ability to get along with others					
Adaptability	☐ Performance in emergencies ☐ Performance with minimum of instruction	☐ Performance under changing conditions ☐ Self reliance, initiative & problem solving					
FOR USE IN RATING SUPERVISORS ONLY							
Supervisory Skills	☐ Leadership ☐ Acceptance by others ☐ Decision making ☐ Effectiveness and skill in planning and laying out work	☐ Fairness & impartiality ☐ Communicating problems to others ☐ Training-Safety					
General Evaluation	Indicate by an (x) in the appropriate box your own general evaluation of the employee's rating, taking all the above and other pertinent factors into consideration. A written statement must be made on the reverse side of this form if the rating is OUTSTANDING or UNSATISFACTORY on this item. Carbon paper must be used when using reverse side.					*	* #

Signature of Rater: ______________________ Signature of Rater's Supervisor ______________________

Title: ______________________ Title ______________________

* An (x) in these blocks indicates loss of annual salary increase
# An (x) in this block indicates employee must be rated again in 90 days
TO EMPLOYEE: Your signature is required, however, it does not imply that you agree with the rating

Date ______________ Employee Signature ______________________

APPENDIX D

Homes Association Costs and Sample Contract

HOME ASSOCIATIONS COSTS

1973-74

NAME	HAULER PRICE	TOTAL D.U.s	UNIT PRICE PER MONTH	TOTAL COST PER MONTH	TOTAL COST PER YEAR
Blue Hills . . .	$2.25	79	$1.60	$ 126.40	$ 1,516.80
*Boulevard Village	1.04	192	1.04	199.68	2,396.16
Bridlespur	1.75	226	1.55	350.30	4,203.60
Chapel Woods	2.00	164	1.85	303.40	3,640.80
*Colonial Square	1.50	124	1.04	128.96	1,547.52
Coves	2.20	195	1.85	360.75	4,329.00
Crestview No. 1	1.51	184	1.50	276.00	3,312.00
Crestview No. 3	1.70	168	1.55	260.40	3,124.80
Crossgates	1.90	193	1.65	318.45	3,821.40
Fairlane	2.35	468	1.55	725.40	8,704.80
Fairwood	2.45	621	1.55	962.55	11,550.60
Foxcroft	2.85	139	1.55	215.45	2,585.40
Glen Arbor	1.75	108	1.55	167.40	2,008.80
Holiday Hills	2.00	419	1.55	649.45	7,793.40
Indian Heights	1.70	175	1.55	271.25	3,255.00
Kirkside	1.90	402	1.65	663.30	7,959.60
Lea Manor	2.00	291	1.55	451.05	5,412.60
Linden Hills	1.75	303	1.55	469.65	5,635.80
*Loma Vista West	.96	286	0.96	274.56	3,294.72
*Mayfair	2.25	96	1.85	177.60	2,131.20
Park Plaza	2.25	183	1.85	338.55	4,062.60
*Park Tower Gardens	.99	204	0.99	201.96	2,423.52
Red Bridge Estates	2.50	34	1.60	54.40	652.80
Red Bridge Hills	2.35	57	1.60	91.20	1,094.40
River Forest	2.00	86	1.55	133.30	1,599.60
*River Park	1.00	200	1.00	200.00	2,400.00
Ruskin Heights	2.35	1,869	1.60	2,990.40	35,884.80
Ruskin Hills	2.25	750	1.60	1,200.00	14,400.00
Santa Fe Hills	2.00	596	1.55	923.80	11,085.60
Sherwood Estates	1.70	620	1.55	961.00	11,532.00
Stratford Estates	1.90	342	1.55	530.10	6,361.20
Sugar Tree Estates	2.00	43	1.55	66.65	799.80
Verona Hills	2.35	315	1.60	504.00	6,048.00
Ward Parkway Estates	2.50	201	1.55	311.55	3,738.60
Westchester	2.23	32	1.55	49.60	595.20
Western Hills	1.70	351	1.55	544.05	6,528.60
36 TOTAL		10,716		$16,452.56	$197,430.72

AVERAGE $1.535/Month X 12 = $18.424/Year

4/18/73
JMM/fm

*City does not furnish bags

CONTRACT NO. HA-____

CONTRACT FOR REFUSE SERVICES

THIS CONTRACT, by and between the ______________________________ Homes Association, Inc., a corporation duly created, organized and existing under and by virtue of the laws of the State of Missouri, by its __________________ ________________________, hereinafter referred to as the "Association," and the City of Kansas City, by its Director of Public Works, hereinafter referred to as the "City,"

WITNESSETH:

WHEREAS, by Committee Substitute for Ordinance No. 39147, the City has provided for the collection and disposal of residential refuse, beginning March 1, 1971 such provision including the grant of authority to the Director of Public Works to enter into contracts with exempt Homes Associations for the provision of such services; and

WHEREAS, the Association's desire for exemption of all dwelling units within it from City collection services has been filed and approved by the Director in accordance with the provisions of Section 16.20 (c), Code of General Ordinances; and

WHEREAS, the Association has submitted to the City a proposed Contract between the Association and ______________________________ ____________________, marked Enclosure "A" and attached hereto and made a part hereof, providing for refuse and collection service to all dwelling units within the Association, consisting of _________ dwelling units located within the perimeter of the Association, such service to be rendered at standards at least as high as those of services being rendered by the City generally, at a cost of $______________ per month, per dwelling unit, and to employ refuse containers of substantially the same type and quality as those employed by the City generally; and

WHEREAS, the Director of Public Works has determined that the reasonable cost of rendering refuse collection and disposal services to all dwelling units within the Association, if rendered by the City with its own work forces, is $_____________ per dwelling unit per month; and

WHEREAS, the City is authorized by Section 70.220, RSMO. 1969, to contract and cooperate with any private person or association for the operation of a public facility or for a common service, provided that the subject and purpose of such contract or cooperation is within the scope of the powers of the City;

NOW THEREFORE, the Association agrees hereby to provide refuse collection and disposal services as specified and provided for in Enclosure "A" attached hereto, to all dwelling units now or hereafter existing within the perimeter of the Association as shown in Enclosure "B", for a period of one (1) year beginning May 1, 1973;

THE EQUAL EMPLOYMENT OPPORTUNITY ordinance of Kansas City is applicable to this contract and its provisions are herein incorporated by reference to enclosure "C" hereto attached.

IN CONSIDERATION WHEREOF, City agrees to pay to the Association, for rendering such services, a sum which shall equal $ _____________ per dwelling unit per month, the same to be paid as follows: each month, within 20 days after receipt of invoice from the Association for services rendered during the preceding month.

PROVIDED HOWEVER, that this contract may be terminated by the Director of Public Works at any time upon determination that the services are not being rendered in accordance with provisions of Section 16.28 (1), Code of General Ordinances.

IN WITNESS WHEREOF, the said parties of the first and second part hereunto set their hands and seals respectively, and Kansas City executes this contract by and through its Director of Public Works.

Kansas City, Missouri
a Municipal Corporation

Kansas City, Mo. ________________ by ______________________________
(Date) Director of Public Works

ATTEST: ______________________________
Homes Association, Inc.

______________________________ by ______________________________
Secretary President

Approved as to form and legality:

Kansas City, Mo. ________________ ______________________________
(Date) (City Counselor)

OFFICE OF THE DIRECTOR OF FINANCE

I hereby certify that there is a balance otherwise unencumbered to the credit of the appropriation to which the above services are to be charged sufficient to meet the obligations hereby incurred, and a cash balance otherwise unencumbered in the Treasury to the credit of the fund from which payment for such services is to be made equal to one-twelfth of the estimated cost of furnishing all the service required by this contract.

Kansas City, Mo. ________________ ______________________________
(Date) Director of Finance

OFFICE OF THE CITY CLERK

The foregoing contract has this day been ratified, approved and confirmed by the Council of Kansas City, Missouri by Ordinance No. __________, effective ________________, 19____.

Kansas City, Mo. ________________
(Date)

ATTEST: ______________________________ By ______________________________
City Clerk

APPENDIX E

City Code and Regulations for Residential Refuse Collection

Prepared Pursuant to
Ordinance No. 39147
Article II
Section 16.24

REGULATIONS
FOR
RESIDENTIAL REFUSE (TRASH AND GARBAGE) COLLECTION

Section A
Schedules

1. Combined refuse collection is to be made at each dwelling unit once each week.

2. An assigned regular collection day (Monday through Saturday) will be designated for each household. Collection will not occur before 7:00 a.m. Refuse must be placed for collection before truck arrival on the designated day.

3. Holiday collection arrangements will be announced prior to the holiday.

4. Further information and assistance with difficulties of service can be obtained by calling 274-1811 or writing Refuse Division, Public Works Department, City Hall, 414 East 12th Street, Kansas City, Missouri 64106.

Section B
Preparation

1. Household refuse is limited to those solid wastes normally generated inside the dwelling unit or household. It shall include such items as food wastes, cans, bottles, papers, etc., but shall not include yard trimmings, furniture, appliances, etc. It shall be placed together as combined refuse (garbage and trash) in the same approved bag. Garbage should be drained and wrapped before depositing in the approved bag.

2. Yard trimmings, grass clippings, and other miscellaneous refuse and rubbish should be deposited in disposable refuse containers or bundled and securely tied--four (4) feet long by two (2) feet thick.

3. Larger rubbish items, small appliances, tires, discarded furniture, etc. may be placed for collection as hereinafter provided.

4. Weight for any single bag, disposable refuse container and its contents or single piece or item of refuse placed for collection shall be no more than sixty-five (65) pounds.

5. Bulky rubbish, heavier than sixty-five (65) pounds, which is too large for collection truck but manageable by two (2) men, will be collected upon receipt of a call as described on an instruction tag affixed to bulky rubbish items by the customer's regular collector.

6. Only disposable refuse containers should be placed at collection points as noted below since containers are not to be emptied by refuse collectors.

Section C
Containers

Descriptions:

1. Refuse Container is the receptacle used by any person to store refuse during the interval between refuse collections. A refuse container may be used as a holder for disposable refuse containers (bags). Receptacle shall be approximately 30 gallon capacity with a top perimeter dimension of about 64 inches and a bottom perimeter

slightly smaller. The individual receiving the refuse collection service will provide and maintain his own refuse container or bag holder.

2. Disposable Refuse Container is the refuse container specifically designed to be used only one time and is to be disposed of together with its refuse contents. It may be used as a liner for a refuse container.

3. Bag refers to Disposable Refuse Container.

4. Approved Bag issued and distributed by the City is approved. Other bags or disposable refuse containers will be approved if they are of a quality equal to City-issued bags.

5. Bulk Type Refuse Containers are receptacles used by several dwelling units at a clustered multi-family housing complex. When required, bulk type refuse containers shall be at least one cubic yard capacity, mounted on casters, and designed to be compatible to collecting equipment as approved by the Director.

Section D
Materials

1. Refuse materials to be collected include but are not limited to the following:

    Combined Refuse (Garbage and Trash)
    Food Wastes
    Cans, Bottles
    Clippings, Grass
    Limbs, Brush, and Small Tree Branches
    Discarded Furniture
    Small Appliances

2. Refuse materials NOT COLLECTIBLE include large unmanageable items such as:

Automobiles, Trucks, Trailers
Engines
Building, Demolition, and Construction
  Materials, Rocks; Dirt
Tree Limbs Generally Six Inches in
  Diameter and Larger
Other Items Not Normally Considered
  Household Refuse

Section E
On Site Storage

1. Household refuse includes garbage as a residue in unwashed cases, bottles, and food wrappings. Therefore, all household or residential refuse must be stored in covered containers.

2. It is suggested that bags be used in refuse containers as can liners or used with holders specifically designed for that purpose.

3. When bags are full, they should be removed from the refuse container or holder with their contents and tied with the wire ties provided. They should be set aside until collection day.

4. On collection day, tied bags should be placed at the collection point for collection.

5. Where bulk type refuse containers are provided at clustered multi-family housing complexes, the tied bag should be placed in the bulk type container immediately upon its removal from the refuse container or holder.

Section F
Collection Points

1. Household refuse in City approved bags may be placed at the house for collection at a place which is visible,

at ground level, readily accessible, and outside of any enclosures.

2. All other refuse, rubbish, yard trimmings, small appliances, tires, discarded furniture, bundled limbs, branches, etc. shall be placed at the street curb or alley line for collection.

3. Bulky rubbish items as described in B-5 above are to be placed at the street curb or alley line for collection.

4. Refuse collectors are not responsible for scattering or spilling of refuse by animals or vandals. Animal difficulties should be reported to the Animal Control Division, 861-0123.

APPROVED, February 16, 1971:

Myron D. Calkins

Myron D. Calkins, Director
Public Works Department

Reproduced from best available copy.

Chapter 16

GARBAGE AND TRASH*

Article I. General

Sec. 16.1. Short title.
Sec. 16.2. Definitions.
Sec. 16.3. Storage, collection and disposal of refuse—Duty to provide.
Sec. 16.4. Storage of refuse.
Sec. 16.5. Collection and disposal of refuse—Permit required.
Sec. 16.6. Frequency of collection.
Sec. 16.7. Same—Collection points.
Sec. 16.8. Same—Vehicles.
Sec. 16.9. Same—Disposal.
Sec. 16.10. Hearings and appeals.
Sec. 16.11. Persons to whom provisions hereof shall not be applicable.
Secs. 16.12–16.19. Reserved.

---

*Charter reference—Collection and disposal of garbage, see S. 1(28).

Administrative Code reference—Division of refuse collection within department of public works, S. A5.122.

Cross references—Duty to keep area surrounding signs clean and free from noxious and offensive substances, S. 2.46; disposition of waste and rubbish at airports, S. 3.11(h), (i), (l); disposition of manure from stables, S. 6.23(d); disposition of dead animals, S. 6.42 et seq.; garbage receptacles for lodging houses, S. 18.190; disposal of waste from frozen dairy products plants, S. 15.150(k); duty to keep restaurants free from litter and rubbish, see S. 15.57(r); duty to keep premises, lot free of rubbish, trash, etc., Secs. 18.6, 18.7; accumulation of garbage and trash so to afford food or harborage for rats, see S. 18.122; duty of occupants of dwellings to keep the premises free of garbage, rubbish, etc., S. 20.35; requirement that basements of dwellings be kept free from rubbish accumulations, S. 20.17; duty to remove refuse from city markets, S. 21.352(h); depositing garbage, dirt, etc., at the municipal market, S. 21.362; disposal of manure from dairies, S. 15.114(f); disposal of waste in milk plants, S. 15.121(k); certain accumulations of garbage, trash, etc., constituting nuisances, S. 25.2(k) et seq.; disposal of waste or drainage from oil or gas well drilling operations, S. 17.34; private disposal systems, Secs. 29.18, 29.19; removal of contents of privy vaults and cesspools, Secs. 29.31, 29.32; disposal of commercial and industrial waste, Sec. 29.44 et seq.; depositing trash, rubbish, etc., in sewers, Sec. 29.1; throwing water or slops on floors, Sec. 26.56; deposit by circuses, wild west shows, etc., to insure the removal of dirt, refuse, etc., S. 5.60; refuse disposal in trailer parks, Secs. 35.11, 35.12.

State law reference—City authorized to provide for garbage and waste collection and disposal, RSMo, Sec. 73.120.

Article II. Collection by City

Sec. 16.20. Scope of service.
Sec. 16.21. Determination and termination of exemption.
Sec. 16.22. Effect of failure to comply.
Sec. 16.23. Refuse to be collected—right of entry.
Sec. 16.24. Rules and regulations.
Sec. 16.25. Prohibited practices.
Sec. 16.26. Duties of owners.
Sec. 16.27. Duties of occupants.
Sec. 16.28. Contracts for refuse collection and disposal services with homes associations.
Sec. 16.29. Penalties.
Secs. 16.30—16.34. Reserved.

Article III. Littering

Sec. 16.35. "Litter" defined.
Sec. 16.36. Littering prohibited.
Sec. 16.37. Removal of dirt or litter.
Sec. 16.38. Dirt, rubbish, litter from abutting property.
Sec. 16.39. Care of trash on private property.
Sec. 16.40. Waste water.
Sec. 16.41. Litter from vehicles.
Sec. 16.42. Drip pans on vehicles carrying oil, petroleum.
Sec. 16.43. Vehicles hauling refuse and trash.
Sec. 16.44. Hauling or dumping of earth or rock.
Sec. 16.45. Illegal dumping.
Sec. 16.46. Vacant property to be kept clean.
Sec. 16.47. Cleaning vacant property—Contents, service of notice.
Sec. 16.48. Same—Effect of noncompliance with notice.
Sec. 16.49. Same—Collection of costs of removal of litter.
Sec. 16.50. Injurious substances on paved streets.
Secs. 16.51—16.64. Reserved.

Article IV. Sanitary Landfills

Sec. 16.65. Definitions.
Sec. 16.66. Cover required.

Sec. 16.67. Use of city-operated landfills.
Sec. 16.68. Permits for private landfills.
Sec. 16.69. Reserved.
Sec. 16.70. Trespassing; removal of material.
Sec. 16.71. Penalty.

ARTICLE I. GENERAL*

Sec. 16.1. Short title.

This ordinance consisting of Articles I and II, shall be known and may be cited as the "Municipal Solid Waste Storage and Collection Ordinance of Kansas City," and is intended to regulate the storage and collection of solid wastes as hereinafter defined. (C. S. Ord. No. 38297, 5-28-70)

Sec. 16.2. Definitions.

For the purposes of this ordinance the following terms shall be deemed to have the meanings indicated below:

Bulky rubbish. Items of rubbish either too large or too heavy to be loaded in refuse collection vehicles with safety and convenience by refuse collectors, with the equipment available therefor.

City. The City of Kansas City, Missouri.

Clustered multi-family housing. A grouping of two or more buildings, each containing at least one dwelling unit, designed or constructed in planned groupings or arrangements, to use common service facilities.

Collection. Removal and transportation of refuse from its place of storage to its place of processing or disposal.

---

*Historical reference–Articles I and II, Sections 24.010 to 24.060 incl., Secs. 24.080 to 24.190, incl., and Secs. 270 to 300 incl., R. O. 1956, as amended by Ord. No. 22619, 4-25-68, were repealed by 4th C.S. Ord. No. 36643, 8-29-69, which in turn was repealed by C. S. Ord. No. 38297, 5-28-70.

Commercial refuse. Refuse resulting from the operation of restaurants, hotels, clubs, hospitals, schools, and any other commercial, industrial or institutional establishments.

Commercial garbage. Garbage produced at restaurants, hotels, clubs, hospitals, schools, and any other commercial, industrial or institutional establishments.

Commercial rubbish. Rubbish resulting from the operation of restaurants, hotels, clubs, hospitals, schools, and any other commercial, industrial or institutional establishments.

Combined refuse. Refuse containing both garbage and rubbish.

Director. The director of public works of the City, or his authorized representative.

Director of fire. The director of fire of the City, or his authorized representative.

Director of health. The director of health of the City, or his authorized representative.

Disposable refuse container. Refuse container specifically designed to be used only one time, and to be disposed of together with its refuse contents.

Disposal. Placing refuse in its final repository.

Dwelling unit. Any room or group of rooms located within a dwelling, and forming a single habitable unit with facilities which are used, or are intended to be used, for living, sleeping, cooking and eating.

Garbage. Putrescible animal or vegetable wastes resulting from the handling, preparation, cooking, serving or consumption of food.

Garbage container. Receptacle used by any person to store garbage during the interval between garbage collections.

Occupant. Any person who, alone or jointly or severally with others, shall be in actual possession of any dwelling unit or of any other improved real property, either as owner, or as a tenant, either with or without the consent of the owner thereof.

Owner. Any person who, alone or jointly or severally with others, shall be in actual possession of, or have charge, care or control of any dwelling unit or of any other improved real property, as title holder, as employee or agent of the title holder, or as trustee or guardian of the estate or person of the title holder.

Person. Any individual, firm, partnership, association, corporation, company or organization of any kind.

Refuse. Unwanted or discarded waste materials in a solid or semi-liquid state, consisting of garbage, rubbish, or a combination thereof.

Refuse container. Receptacle used by any person to store refuse during the interval between refuse collections.

Residential garbage. Garbage produced at houses, apartments or other dwelling units.

Residential refuse. Refuse resulting from the maintenance and operation of houses, apartments or other dwelling units.

Residential rubbish. Rubbish resulting from the maintenance and operation of houses, apartments or other dwelling units.

Rubbish. Non-putrescible solid wastes consisting of combustible and non-combustible waste materials from residential, apartment, commercial, industrial and institutional establishments, including yard wastes and items commonly referred to as "trash."

Solid waste. Refuse.

Storage. Keeping, maintaining or storing refuse from the time of its production until the time of its collection. (C. S. Ord. No. 38297, 5-28-70)

Sec. 16.3. Storage, collection and disposal of refuse–Duty to provide.

All persons owning or occupying any dwelling unit, house or apartment producing refuse, and all persons owning, operating, managing or conducting any restaurant, hotel, club, hospital, school, or any other commercial, industrial or institutional establishment producing refuse, within the corporate limits of the City, shall provide sufficient and adequate refuse containers for the storage of such refuse, and shall make adequate provision for the storage, collection and disposal of all refuse produced upon any such premises, in accordance with the provisions of this article. (C. S. Ord. No. 38297, 5-28-70)

Sec. 16.4. Storage of refuse.

Any person required by the provisions of Section 16.3 hereof to make adequate provisions for the storage, collection and disposal of refuse, shall store such refuse as hereinafter provided:

(a) Garbage or combined refuse shall be stored in refuse containers which are leak-proof, and which shall be securely covered at all times, while not in actual use, with tight-fitting covers.

(b) Rubbish alone shall be stored in refuse containers so constructed and maintained as to prevent the dispersal of rubbish placed therein upon the premises served, upon adjacent premises, or upon adjacent public rights of way.

(c) Grabage and refuse containers shall be continuously maintained in a clean, neat and sanitary condition, free of structural defects.

(d) The adequacy and sufficiency of garbage and refuse containers shall be determined with reference to their physical properties, as being capable of containing and storing refuse in a safe and sanitary manner related to their particular use; the quality and quantity of the refuse to be stored therein; the frequency of their collection and use; and the type and extent of handling required to store refuse therein and to dispose of the refuse stored therein. (C. S. Ord. No. 38297, 5-28-70)

Sec. 16.5. Collection and disposal of refuse--Permit required.

(a) No person shall engage in the business of collecting refuse or rubbish within the corporate-limits of the City, or of processing refuse within said corporate limits, without first obtaining a permit therefor from the director; provided, however that this provision shall not be deemed to apply to employees of the holder of any such permit, nor to prohibit any person from collection or processing of his own refuse.

(b) No such permit shall be issued until and unless the applicant therefor, in addition to all other requirements set forth, shall file and maintain with the director evidence of a satisfactory public liability insurance policy, covering all operations of such applicant pertaining to such business and all vehicles to be operated in the conduct thereof, in the amount of not less than Fifty Thousand Dollars ($50,000.00) for each person injured or killed, and in the amount of not less than One Hundred Thousand Dollars ($100,000.00) in the event of injury or death of two or more persons in any single accident, and in the amount of not less than Five Thousand Dollars ($5,000.00) for damage to property. Such policy may be written to allow the first One Hundred Dollars

($100.00) of liability for damage to property to be deductible. Should any such policy be cancelled, the director shall be notified of such cancellation by the insurance carrier in writing not less than ten (10) days prior to the effective date of such cancellation, and provisions to that effect shall be incorporated in such policy, which shall also place upon the company writing such policy the duty to give such notice.

(c) Each applicant for any such permit shall state in his application therefor the nature of the permit desired, as to collect, or to process, or to transport, or combination thereof; the nature of refuse or rubbish to be collected, or processed, or transported, as to rubbish, combined refuse, garbage, bulky rubbish, or any combination thereof; and as to residential refuse, commercial refuse, or both; the number of refuse hauling vehicles to be operated thereunder; the precise location or locations of refuse processing establishment to be used, if any; also each applicant for permit to collect combined refuse or garbage shall state the intervals at which he proposes to provide collection; provided, that no such permit shall be issued for the regular collection of garbage or refuse at intervals greater than once each week.

(d) The permit required by subparagraph (a) hereof shall be issued for the period of one calendar year, and each applicant shall pay therefor a fee of Twenty Dollars ($20.00) for each refuse hauling vehicle to be used in such business and for each refuse processing establishment to be operated in such business. Such permit may be suspended or revoked, upon notice and hearing before the director, for violation of any of the provisions of this article, and any such suspension or revocation may be appealed to the Board of Refuse Appeals in the manner hereinafter provided in section 10 hereof. Any such permit which shall be issued after June 30, of any calendar year shall be issued upon payment of one-half of the permit fee hereinbefore provided, and shall be issued for the remainder of the calendar year of issue. (C.S. Ord. No. 38297. 5-28-70; C.S. Ord No. 39701, 6-4-71)

Amendment note--C.S. for Ord. No. 39701, 6-4-71, reduced required insurance coverage to \$50,000, \$100,000 and \$5,000, respectively.

Sec. 16.6. Frequency of collection.

Residential refuse, other than bulky rubbish, shall be collected at intervals not greater than once each week, except as otherwise provided in this chapter. Commercial refuse shall be collected at intervals not greater than once each week, and shall be collected at such lesser intervals as may be fixed by the director of health upon a determination that such lesser intervals are necessary for the preservation of the public health with respect to any particular establishment producing commercial garbage or combined refuse, or at such lesser intervals as may be fixed by the director of fire upon a determination that such lessor intervals are necessary for the preservation of the public safety with respect to any particular establishment producing inflammable commercial refuse. (C. S. Ord. No. 38297, 5-28-70)

Sec. 16.7. Same--Collection points.

Refuse containers for residential refuse shall be stored upon the residential premises. Refuse containers for commercial refuse shall be stored upon private property, unless use of public property shall have been specially granted for such purposes, at points which shall be well drained, and fully accessible to collection equipment and to public health inspection and fire inspection personnel. (C. S. Ord. No. 38297, 5-28-70)

Sec. 16.8. Same--Vehicles.

All vehicles to be used in the collection of refuse shall be kept and maintained in a clean and sanitary condition, and shall be so constructed, maintained and operated as to prevent spillage of the type of refuse to be collected therein. All vehicles to be used in the collection of garbage or combined refuse shall be constructed with water-tight bodies and with covers of metallic or other rigid, impervious material, or, in the alternative, the entire bodies thereof shall be enclosed, with only loading hoppers exposed. (C. S. Ord. No. 38297, 5-28-70)

Sec. 16.9. Same—Disposal.

All refuse collected under the provisions of this ordinance shall be disposed of only at sanitary landfills operated by the City, or privately operated under City permit, or at other lawful disposal installations, within or without the corporate limits of the City, which the appropriate health authorities shall have approved. (C. S. Ord. No. 38297, 5-28-70)

Sec. 16.10. Hearings and appeals.

Any person deeming himself aggrieved by any determination made by the director, the director of fire or the director of health, as hereinbefore provided, upon written application therefor filed with the director making such determination, shall be accorded a hearing before such director for the reconsideration of such determination. At such hearing, such person may appear in person or by counsel, hear the evidence presented by the City, cross-examine witnesses, and introduce evidence on his own behalf. Within ten days after such hearing, such director shall render his written decision thereon, and shall notify such person of same within five days thereafter. Any person deeming himself aggrieved by any such decision may, within ten days after notification thereof, file with such director a written notice of appeal from such decision to the Board of Refuse Appeals, which shall consist of the director, the director of fire and the director of health, except that in each such appeal, the director having rendered the decision appealed from shall be replaced on said Board by the City Manager of Kansas City, or his authorized representative, who shall be ex officio chairman thereof. Upon appeal, the matter shall be heard de novo, with the appellant enjoying the same rights to participate as in the original hearing; and, upon request of appellant, the Board shall order a transcript of the proceedings to be made at the cost of appellant, and shall enter in writing its findings of facts and conclusions of law made therein in all cases. The decision of the Board shall be conclusive, unless further appealed to a court of competent jurisdiction. (C. S. Ord. No. 38297, 5-28-70)

Sec. 16.11. Persons to whom provisions hereof shall not be applicable.

Nothing contained in Sections 16.1 through 16.10 hereof, inclusive, shall be deemed to be applicable to the removal. hauling or dumping of earth and rock material from grading or excavation activities, nor the removal, hauling or dumping of debris produced by the construction, repair or demolition of improvements on real property; provided, however, that any such material shall be conveyed in tight vehicles, trucks or receptacles, so that none of such material so conveyed shall spill upon the public rights of way. (C. S. Ord. No. 38297, 5-28-70)

Secs. 16.12–16.19. Reserved.

ARTICLE II. COLLECTION BY CITY*

Sec. 16.20. Scope of service.

The director shall provide for the collection and disposal by the city of residential refuse in the city, except as otherwise provided hereinafter and from city municipal establishments, as directed by the city council.

---

*Annotation - Article II, Secs. 16.20 to 16.32, were repealed by C.S. Ord. No. 39147, 1-15-71, effective 3-1-71, which enacted in lieu thereof a new Article II. Secs 16.20 to 16.29, providing for city wide residential refuse collection.

Charter reference - Collection and disposal of garbage, S. 1(28).

Cross reference - Sec. 35.12.

Administrative Code reference - Division of refuse collection within department of public works, S. A5.122.

State law reference - City authority to provide for garbage and waste collection and disposal, RSMo, S. 73.120.

(a) The director shall not provide for the collection and disposal of residential refuse from trailer parks or buildings containing seven or more dwelling units.

(b) The director shall not provide for the collection and disposal of residential refuse from single family dwellings whose land plats comprise three or more acres, or from dwelling units located in areas zoned for agriculture, or from dwelling units in buildings containing less than seven dwelling units within clustered multi-family housing under common ownership, except upon the specific application therefor by the owners or lawful occupants thereof.

(c) The director may, upon specific application by the owners thereof, exempt from city collection and disposal services: dwelling units in organized homes associations; provided however, that all of the dwelling units in any such homes association shall be provided with refuse collection and disposal services at the same standard as, or at a higher standard than that required by this article to be provided by the director; and provided, further, that any such application by any such homes association servicing all dwelling units therein and thereof shall be deemed, prima facie, to be the application of the owners of all such dwelling units. Such exemption may be terminated by the director at any time upon failure to maintain such services at the level required for granting the exemption.

(d) The director shall not be required to provide for the collection and disposal of residential refuse from any dwelling unit where driving on private streets or drives is required to accomplish collection without an unreasonable amount of walking.

Nothing contained in this section shall prevent any person receiving city refuse collection and disposal service as herein provided from supplementing such service, at his own expense, with additional or extra service on an occasional or on a regular basis so long as such service meets the sanitary and neatness requirements of article 1 of this code. (C.S. Ord. No. 38297, 5-28-70; C.S. Ord. No. 39147, 1-15-71)

Sec. 16.21. Determination and termination of exemption.

The director shall determine whether any dwelling unit shall be exempted from the provisions of this article and whether such exemptions shall be terminated in accordance with the provisions of section 16.20 hereof; and the director shall notify the owner of any such establishment or dwelling unit, including homes associations representing owners of dwelling units therein, of his determination within ten (10) days after such determination shall have been made. Any person deeming himself aggrieved by any such determination shall, upon written application made within ten (10) days after such notification, be accorded a hearing before the director, and shall be entitled to an appeal from the decision of the director therein, all as provided by article 1, section 16.10 hereof. (C.S. Ord. No. 38297, 5-28-70; C.S. Ord. No. 39147, 1-15-71)

Sec. 16.22. Effect of failure to comply.

Nothing contained in this article shall be deemed to require that the director collect or dispose of any refuse not prepared, stored and placed for collection points in substantial compliance with the provisions of this ordinance, and with the lawful rules and regulations made and promulgated in pursuance hereof; provided, further, that the failure of the director to collect refuse not so prepared, stored and placed for collection, shall in no way be deemed to affect the powers of the director of health, pursuant to other provisions of this code, relating to the abatement of nuisances dangerous to the public health, or to nuisances in dwellings affecting the public health. (C.S. Ord. No. 38297, 5-28-70; C.S. Ord. No. 39147, 1-15-71)

Sec. 16.23. Refuse to be collected—right of entry.

All refuse from premises to which refuse collection and disposal services are provided in accordance with the terms of section 16.20 hereof, shall be collected by the city, except bulky rubbish as defined in article I, section 16.2 hereof, and except refuse too large for refuse containers; provided, however, that refuse too large for containers will be collected by the city if tied securely in bundles not exceeding reasonable limitations of weight and bulk to be fixed by regulations to be made and promulgated by the director as hereinafter provided. Nothing contained herein however, shall prevent the city from providing occasional and special collection service for bulky rubbish items limited to discarded household goods which can not be handled by regular collection trucks but which can be handled by no more than two men and their specifically assigned collection equipment all as determined by the director. All refuse collected by the city shall, upon being loaded into collection equipment, become the property of the city. Refuse for which city collection is not provided, as hereinbefore stated, shall be sorted, collected and disposed of in accordance with the provisions of article I hereof.

Refuse collectors, whether employees of the city or employees of a refuse collection service operating under contract with the city, are hereby authorized to enter upon private property for the purpose of collecting refuse therefrom as required by this ordinance or by any lawful rules or regulations made and promulgated pursuant thereto; provided, however, that nothing contained herein shall be deemed to authorize any such refuse collector to enter in or upon any building or outbuilding on any private property for such purpose, or to enter in or upon any private property for any other purpose. (C.S. Ord. No. 38297, 5-28-70; C.S. Ord. No. 39147, 1-15-71)

Sec. 16.24. Rules and regulations.

The director is authorized to make and promulgate reasonable and necessary rules and regulations to carry out the provisions of this article, governing, but not limited to:

(a) Schedules of and routes for collection of refuse, provided that such collections shall be made at intervals not greater than once each week.

(b) Preparation, drainage and wrapping of garbage deposited in refuse containers, provided, however that the director shall make no rule or regulation prohibiting the storage of properly prepared, drained and wrapped garbage in refuse containers containing other refuse.

(c) Specifications for refuse containers, including the type, composition, equipment, size and shape thereof; and such rules and regulations may require use of disposable refuse containers together with appurtenant equipment including holder and covers therefor, and whenever such disposable containers are furnished by the director, such appurtenant equipment shall be furnished by the owners as provided in section 16.26 hereof; and provided further that such rules and regulations as pertain to multi-family housing whenever collected by the city under terms of article II hereof may require or permit the use of large bulk type refuse containers to be furnished by the owners as provided in section 16.26 hereof.

(d) Identification of refuse containers and of the covers thereof, and of equipment thereto appertaining, if any.

(e) Weight limitations on the combined weight of refuse containers and the contents thereof, and weight and size limitations on bundles of refuse too large for refuse containers, provided that the weight and bulk of each of such containers and bundles shall not exceed the weight and bulk which the director shall find can be loaded in refuse collection vehicles with safety and convenience by the collectors, with the equipment available therefor.

(f) Storage of refuse in refuse containers.

(g) Sanitation, maintenance and replacement of refuse containers.

(h) Collection and disposal of refuse.

(i) Collection points of refuse containers and bundles of refuse too large for refuse containers.

(j) Institution and maintenance of experimental and research projects within specified portions of the city for limited periods, provided, however, that such projects meet all health and sanitation requirements provided for in article I and II this chapter.

Such reasonable and necessary rules and regulations are hereby authorized which relate to the safe, tidy and sanitary storage, and to the safe, tidy, sanitary, efficient and economical collection and disposal of refuse to be collected by the city under the provisions of this article, with due respect to the number of men and the quantity and types of equipment available to provide such service from time to time; provided, moreover, that the director may, by regulation, provide separately for the specifications of disposable and non-disposable refuse containers, but refuse containers, of whatever type, when containing refuse, shall be kept securely closed when not in actual use.

A copy of any and all rules and regulations made and promulgated under the provisions hereof shall be filed in the office of the city clerk of the city. (C.S. Ord. No. 38297, 5-28-70; C.S. Ord. No. 39147, 1-15-71)

Cross reference- Sec. 20.30.

Sec. 16.25. Prohibited practices.

It shall be unlawful for any person to deposit refuse in the refuse container of another person, dwelling unit or establishment without the consent of such person, or of the occupant of such dwelling unit or establishment.

It shall be unlawful for any person to interfere in any manner with refuse collection equipment, or with refuse collectors in the lawful performance of their duties as such, whether such equipment or collectors shall be those of the city, or those of a refuse collection contractor operating under a contract with the city. (C.S. Ord. No. 38297, 5-28-70; C.S. Ord. No. 39147, 1-15-71)

Sec. 16.26. Duties of owners.

The owner of every dwelling unit and the officer in charge of every municipal establishment from which refuse collection is made by the city under this article, shall provide refuse containers, and, in the event disposable refuse containers shall be furnished by the director, shall provide required equipment appurtenant thereto including holders and covers, meeting reasonable standards to be established by the director, in adequate number to serve each such dwelling unit and establishment; and such owner shall provide proper identification for each such refuse container and its cover or for such equipment, by dwelling unit or establishment address, as provided by regulations; and shall repair or replace same from time to time without notice when any such container, cover or item of equipment shall no longer meet the specifications therefor as established by regulations of the director. (C.S. Ord. No. 38297, 5-28-70; C.S. Ord. No. 39147, 1-15-71)

Cross reference–Sec. 20.34.

Sec. 16.27. Duties of occupants.

The occupant of every dwelling unit and the office in charge of every municipal establishment, from which refuse collection is made by the city under this article, shall place all refuse in proper refuse containers, except as otherwise provided herein, and shall maintain such refuse containers in a clean and sanitary condition at all times, and shall comply with the provisions of this ordinance and all lawful regulations promulgated pursuant thereto relating to the storage and collection points of refuse, the preparation, draining and wrapping of garbage deposited in refuse containers, and weight and bulk regulations. (C.S. Ord. No. 38297, 5-28-70; C.S. Ord. No. 39147, 1-15-71)

Cross reference–Sec. 20.35.

Sec. 16.28. Contracts for refuse collection and disposal services with homes associations.

The director is authorized to execute contracts for refuse collection and disposal services with homes associations exempted from city collection and disposal services under the provisions of section 16.20(c) hereof, provided, however:

(1) That such persons contracting with the director shall be required by such contract

(a) to provide such services to all dwelling units within a contiguous area specified therein containing not less than 26 dwelling units;

(b) to provide such services to such dwelling units at a standard at least as high as the standard of services being rendered by the city generally, without relation to experimental and research projects conducted as provided in section 16.24(j) hereof.

(c) to employ refuse containers of substantially the same type and quality as those employed by the city generally, without relation to experimental and research projects conducted as provided in section 16.24(j) hereof.

(2) That the consideration payable by the city under the terms of such contracts, in cash and in kind, shall not exceed the reasonable cost, as determined by the director, of rendering such services at the same standard as services rendered generally by the city if rendered with the city's own work forces, or the actual cost to such contracting persons of rendering the services actually rendered, whichever shall be the lesser.

(3) That any such contract shall contain appropriate provisions for termination by the director upon determination that such services are not being

rendered in accordance with the provisions of subparagraph (1) of this section, or upon termination of the exemption provided for in section 16.20(c) hereof. (C.S. Ord. No. 39147, 1-15-71)

Sec. 16.29. Penalties.

Any person violating any of the provisions of article I or article II of this chapter, or any lawful rule or regulation promulgated pursuant thereto, upon conviction, shall be punished by a fine of not less than five dollars ($5.00), nor more than five hundred dollars ($500.00); provided, that each day's violation thereof shall be a separate offense for the purposes hereof. (C.S. Ord. No. 38297, 5-28-70; C.S. Ord. No. 39147, 1-15-71)

Secs. 16.30–16.34. Reserved.

ARTICLE III. LITTERING*

Sec. 16.35. "Litter" defined.

For the purpose of this article "litter" shall mean all ashes, cinders, slops, filth, excrement, boards, sawdust, wood or metal

---

*Aministrative Code reference–Division of refuse collection within department of public works S. A5.122.

Cross references–Duty to keep area surrounding signs clean and free from noxious and offensive substances, S. 2.46; disposition of waste and rubbish at airports, S. 3.11(b),(i),(1); duty to keep restaurants free from litter and rubbish, S. 15.57(r); duty to keep lot, premises free of rubbish, trash, etc., Secs. 18.6, 18.7; accumulations of garbage and trash so to afford food or harberage for rats, S. 18.122; duty of occupants of dwellings to keep the premises free from garbage, rubbish, etc., S. 20.35; basements of dwellings to be kept free from rubbish accumulations S. 20.17; duty to remove refuse from city markets, S. 21.352(h); depositing garbage, dirt, etc., at the municipal market, S. 21.362; certain accumulations of garbage, trash, etc., constituting nuisances, S. 25.2(k); depositing

shavings, rubber, old tires, stones, rocks, sand, oil, coal oil, gasoline, paint, dirt, dust, straw, soot, sticks, lumber scraps, boxes, barrels, kegs, crates, cans, bottles, cartons, paper, trash, leavings, sweepings, rubbish, refuse, debris, slag, garbage, manure, offal, putrid fish, meat, entrails, decayed fruits or vegetables, waste water, animal or vegetable products or matter, broken ware, broken glass, rags, bones, old iron, tacks, nails, wire or other metal, grass, leaves, weeds, foliage or shrub cuttings or clippings, old wearing apparel, all dead animals or any other offensive or disagreeable substance or thing thrown, cast, dropped, blown, spilled, poured, discharged, swept, left, or deposited by anyone in or upon any curb, gutter, street, alley, boulevard, highway, right-of-way, viaduct, tunnel, sidewalk, park, parkway, public square, public building, vacant or occupied lot, vacant building, or pond, stream or pool of water. (R. O. § 67.010, added by Ord. No. 22960, 9-12-58)

Sec. 16.36. Littering prohibited.

No person shall sweep, throw, cast or otherwise place or deposit litter, or direct, suffer or permit any servant, employee, agent or other person under his control to sweep, throw, cast or otherwise place or deposit litter of any kind whatsoever, in or upon any curb, gutter, street, alley, boulevard, highway, right-of-way, viaduct, tunnel, sidewalk, park, parkway, public square, public building, vacant or occupied lot, vacant building, or pond, stream, or pool of water. (R. O. § 67.020, added by Ord. No. 22960, 9-12-58)

Sec. 16.37. Removal of dirt or litter.

It shall be the duty of all persons owning or occupying any real property, fronting upon any street, boulevard or highway, to keep the sidewalk, curbing and guttering in front and alongside of such property and on the same side of the street, in good order, and to clean the same, and to remove from any

---

trash, rubbish, etc., in sewers, § 29.1; throwing water or slops on floor, § 26.56; deposit by circuses, wild west shows, etc., to insure the removal of dirt, refuse, etc., § 5.60; refuse disposal in trailer parks, §§ 35.11, 35.12.

such sidewalk, curbing and guttering all earth or litter that in any way obstructs or renders the same dangerous, inconvenient or annoying to any person. Such owners or occupants are prohibited from sweeping or otherwise moving litter from sidewalks into the gutters and streets; except that owners or occupants of real property located within the area bounded by the south side of 6th Street and the south side of 20th Street, the west side of Broadway and the east side of Locust, are not prohibited from sweeping or otherwise moving litter from sidewalks into the gutters and streets, between the hours of 8:00 p.m. and 11:00 p.m., provided such litter does not contain bottles, broken glass, nails or similar substances which might damage or injure the tires of vehicles, or the feet of persons or animals. (R. O. § 67.030, added by Ord. No. 22960, 9-12-58)

Sec. 16.38. Dirt, rubbish, litter from abutting property.

No owner, occupant or agent of any land abutting upon any sidewalk, street, alley, boulevard, park or parkway of the city shall allow the earth or any rubbish or litter from said land to fall, blow, or wash upon any part of said sidewalk, street, alley, boulevard, park or parkway. (R. O. § 67.050, added by Ord. No. 22960, 9-12-58)

Sec. 16.39. Care of trash on private property.

No person shall place or permit to be placed upon his property any trash, litter or rubbish without placing the same in containers or securely covering the same so that it cannot be blown or washed upon any street. (R. O. § 67.120, added by Ord. No. 22960, 9-12-58)

Sec. 16.40. Waste water.

The washing of ice, spittoons, animals, equipment, wagons, carts and trucks, and the throwing or flowing of waste water used in washing any of the aforesaid articles, on or in any sidewalk, street, alley, boulevard, highway, right-of-way, park or parkway is hereby prohibited, except that the noncommercial washing of private automobiles, by members of the family owning same, in or upon a street or alley adjacent to private property either owned or occupied by the owner of the automobile being washed is not prohibited when such washing does not cause an accumulation of dirt, mud or similar materials to be deposited in the street or alley, and further provided such washing does not create a hazardous or dangerous condition within or on the street, or restrict free passage over the same. (R. O. § 67.060, added by Ord. No. 22960, 9-12-58)

Sec. 16.41. Litter from vehicles.

No person, within any vehicle, shall throw, cast, place, drop, spill or in any manner deposit or permit to be deposited any litter, or any other offensive or disagreeable substance or thing in or upon any street, sidewalk, boulevard, highway, right-of-way, park or parkway, or public place, or on private property without the owner's consent. (R. O. § 67.070 added by Ord. No. 22960, 9-12-58)

Sec. 16.42. Drip pans on vehicles carrying oil, petroleum.

No person shall engage in hauling oil or petroleum in tanks, cans, or other receptacles on wagons, carts, or vehicles which shall not have drip pans attached to such wagon, cart or other vehicle, such drip pans to be so constructed and placed underneath the faucet, spigot or other opening of the tank, can or other receptacle where a leakage or dripping is likely to occur as to prevent the leaking, dripping, spilling and running of oil or petroleum in or upon any street. (R. O. § 67.150, added by Ord. No. 22960, 9-12-58)

Cross reference—Drip pans on vehicles carrying oil, etc., § 30.10.

Sec. 16.43. Vehicles hauling refuse and trash.

No person shall remove or convey any trash, litter, rubbish, waste animal matter or waste fruit and vegetables upon any street of the city except in strong, tight vessels or receptacles, tank or wagon boxes mounted on wheels. If it shall be necessary to build up the sides of the vehicle above the bed, close-fitting side and end boards of wood or metal shall be used. Every such vehicle carrying any such waste material shall be so loaded and driven that none of the contents thereof shall fall therefrom, and shall be covered with a fixed or movable wooden or metal top extending the full length of the sides and fitting tightly enough to prevent any material from spilling or being blown therefrom. No person removing or conveying any such material shall fail, neglect or refuse to replace immediately in any vessel, receptacle, tank, wagon or truck, any such material which shall have fallen therefrom in or upon any street. (R. O. § 67.110, added by Ord. No. 22960, 8-12-58)

Sec. 16.44. Hauling or dumping of earth or rock.

The provisions of this article shall not apply to the hauling or dumping of earth and rock material from grading or excavation activities; provided however, that any such material shall be conveyed in tight wagons, trucks or other receptacles so that none of the contents thereof shall spill upon the streets. (R. O. § 67.130, added by Ord. No. 22960, 9-12-58)

Cross reference—Dumping dirt, rock, etc., § 30.9.

Sec. 16.45. Illegal dumping.

No person shall dump or otherwise deposit any garbage, household rubbish, litter or any other offensive or disagreeable thing in any public place, public building or market, or on or along any sidewalk, street, alley, boulevard, highway, right-of-way, viaduct, tunnel, park, parkway, or upon any private property without the consent of the owner of said property, nor shall any person dump or deposit garbage or household refuse in any city litter can or basket upon any street. (R. O. § 67.080, added by Ord. No. 22960, 9-12-58)

Sec. 16.46. Vacant property to be kept clean.

It shall be the duty of every owner, lessee, agent or other person having control, charge, authority or management over vacant property to keep the same free and clear of any and all litter of every kind and description. (R. O. § 67.090, added by Ord. No. 22960, 9-12-58)

Cross reference—Duty to keep property free of rubbish, etc., §§ 18.6, 18.7.

Sec. 16.47. Cleaning vacant property—Contents, service of notice.

Whenever the director of public works shall find that litter of any kind or description has been allowed to stand or accumulate upon any lot of land, he shall serve written notice upon the owner, lessee, agent or other person having control thereof to comply with the provisions of section 16.46. It shall be sufficient notification to deposit a copy of such notice in the United States mail, properly stamped and directed to the person shown upon the books of the city treasurer as having last paid taxes upon such land, or to post a copy of the notice upon the premises. (R. O. § 67.100, added by Ord. No. 22960, 9-12-58)

Sec. 16.48. Same—Effect of noncompliance with notice.

If the person to whom the notice described in section 16.47 is directed fails or neglects to cause the litter to be removed within five (5) days, Saturdays, Sundays and legal holidays excepted, after such notice has been served or posted upon the premises, the director of public works may enter upon the lot of land and remove such litter and charge the cost thereof to the owner or lessee in control of the lot. (R. O. § 67.100, added by Ord. No. 22960, 9-12-58)

Sec. 16.49. Same—Collection of cost of removal of litter.

The cost of removing such litter may be assessed and collected as a lien on the property affected thereby. As soon as the cost of removing such litter shall be determined by the director of public works, he shall notify, by letter deposited in the United States mail, the owners, lessees, or agents of the cost and, if, after thirty (30) days from the mailing of such notice the cost of removing the litter is not paid, the director of public works shall certify assessments and apportionments covering the cost to the director of finance. Such apportionment shall contain the names of the owners and all other parties interested in the land affected and charged therewith who were such upon the date when the removal of such litter was performed. Such names are to be determined and taken from the assessment books used for the assessment and levy of general taxes by the city, but no defect or mistake in such books or in the description therein of the land or in the names in such apportionment shall impair the validity of the lien on such lot or bills issued therefor. The director of finance shall immediately, upon the receipt of such apportionment, enter the assessment therein contained in appropriate books to be kept for that purpose showing the property assessed. (R. O. S. 67.100, added by Ord. No. 22960, 9-12-58)

Sec. 16.50. Injurious substances on paved streets.

No person shall throw or place any substance likely to injure the pavement upon any paved street within the limits of the city. (R. O. S. 67.140, added by Ord. No. 22960, 9-12-58)

Secs. 16.51–16.64. Reserved.

Editor's note—Secs. 16.51–16.57 repealed by Ord. No. 38921, 11-20-70.

ARTICLE IV. SANITARY LANDFILLS*

Sec. 16.65. Definitions.

For the purposes of this article the following terms shall have the meanings respectively ascribed:

Noncombustible landfill: A place for the disposal of refuse and trash. No material shall be burned on such class of landfill.

Offal landfill: A place for the disposal of waste animal matter and waste fruits and vegetables.

Demolition debris: Such debris which shall include but is not necessarily limited to earth, wood, bricks, concrete, cinder and cement blocks, metal pipes and wire or wiring, roofing materials, glass, rubble, spoil, plaster, plasterboard, plastic boards of all shapes and sizes, and all other kinds of materials common to the building construction industry. (R.O. S. 24.210, amend. by Ord. No. 21317, 4-18-57; C.S. Ord. No. 41101, 5-12-72)

Amendment note—C.S. Ord. No. 41101 added the above definition of demolition debris.

---

*Administrative Code reference—Division of refuse collection within department of public works, S. A5.122.

State law reference—City authority to provide for garbage and waste collection and disposal, R.S.Mo., S. 73.120.

Sec. 16.66. Cover required.

No landfill shall be operated unless sufficient cover is provided to the satisfaction of the public health engineer and commissioner of refuse collection. (R.O. S. 24.210, amend. by Ord. No. 21317, 4-18-57)

Sec. 16.67. Use of city operated landfills.

(a) *Fees for use.* Any person who shall enter upon a landfill operated by the city for the purpose of dumping trash or refuse thereon shall pay to the city a fee of seventy-five cents ($0.75) for each passenger automobile load or partial load; two dollars ($2.00) per net ton of trash or refuse hauled on each commercial vehicle, truck or trailer; plus one dollar ($1.00) for each truck or trailer which does not mechanically dump or eject its load; the minimum charge for each entry shall be seventy-five cents ($0.75) for each load or partial load. Said payments shall be made in such a manner as may be prescribed by the director of finance.

(b) *Supervision of use.* All dumping on city-operated landfills shall be under the supervision, direction and control of the director of public works.

(c) *Fees for demolition debris.* In lieu of the fees provided in (a) supra, fees for depositing demolition debris as defined herein at city landfills, as measured, shall be as follows:

$3.00 for trucks having a capacity of five (5) cubic yards, per load, or less.

$6.00 for trucks having a capacity of ten (10) cubic yards, per load, but more than five (5) cubic yards.

$3.00 for each five (5) cubic yards, or fractions thereof, per load, where truck capacity is over ten (10) cubic yards.

The director of public works shall have the power, and it shall be his duty, to designate the particular city-operated landfill wherein demolition debris may be dumped and disposed of, and the hours of the day the same may be accomplished.

(d) *Refuse disposal fee deposit agreement.* The director of public works is hereby authorized upon application of any person, corporation or association upon forms to be provided by said director, to provide for the extension of credit for users of the sanitary landfills of city based upon the foregoing charges. Said agreements shall provide for a deposit by such applicants to insure collection of monthly billings as provided aforesaid and all billings made under such agreements shall be paid within ten (10) days after receipt thereof. The director shall be empowered to determine the amount of deposit required at any time during the term of any agreements so made and upon failure to remit by any applicant the director is authorized to withdraw from said deposit all current billings at any time owing by any applicant. Whenever an applicant fails or refuses to comply with the terms of the agreement or fails to make sufficient deposit as determined by the director, said contract may be cancelled forthwith by the director and such applicants will be considered on a cash basis. For the purpose of determining the amount of the deposit the director is authorized upon new applications to estimate a deposit based upon two months of billing, but after such two months said director may increase or decrease said deposit depending upon the actual averages as shown by usage of sanitary landfills by the respective applicants. Such deposits will not draw interest. (R.O. S. 24.310, amend. by Ord. No. 28469, 2-1-63; Ord. No. 35225, S. A, 5-24-68; Ord. No. 35534, S. A, 6-28-68; C.S. Ord. No. 41101, 5-12-72)

Amendment note—Ord. No. 35225, S. A, amended S. 16.67 by revising the charges in (a) and substituting the director of public works for the commissioner of refuse collection in (b). Ord. No. 35534, S. A, amended S. 16.67 by adding (c); the catch phrase was added to (c) by the editors. Ord. 41101 added in subparagraph (d) a separate fee schedule and other provisions concerning demolition debris disposed of at city owned landfills.

Sec. 16.68. Permits for private landfills.

(a) *Required.* No person shall maintain or operate a landfill for the reception or disposal of trash, rubbish or waste material without first applying to the commissioner of refuse collection for a permit to operate and maintain same.

(b) *Duration, fee.* Said permit shall be for a period of one year from its issuance and a fee of one hundred dollars ($100.00) shall be paid upon issuance.

(c) *Permit conditions.* No such landfill shall be maintained in a locality where it will be a nuisance, annoyance or inconvenience to the residents of the vicinity, and the commissioner of refuse collection shall determine such fact before issuing or refusing a permit. Separate permits shall be issued for noncombustible landfills and for offal landfills and the holder of a permit for one class of landfill shall not receive material properly restricted to another class of landfill, nor shall any person deposit material upon any landfill except as authorized by the permit as issued. Every landfill shall be maintained

[The next page is 1809]

in neat condition and the material shall be leveled off from day to day and shall not be raised to an elevation above that of the curbline of any street abutting on that part of the landfill where deposited.

(d) *Inspections; permit revocation.* Such landfill shall be subject to inspection by employees of the public works department and of the health department, and upon notice and hearing before the director of public works, the permit may be revoked for violation of any of the provisions of this article appertaining to such class of landfill. (R. O. § 24.230, amend. by Ord. No. 21317, 4-18-57)

Editor's note—Ord. No. 35225, § A, amended § 16.67 by substituting the director of public works for the commissioner of refuse collection.

Sec. 16.69. Reserved.

Amendment note—Sec. 16.69, derived from § 24.240 of the 1956 Revised Ordinances, regarding garbage deposits, was repealed by Ord. No. 35225, § A, enacted May 24, 1968.

Sec. 16.70. Trespassing; removal of material.

No person shall enter upon any landfill without the consent of the owner, nor shall any person tamper with or remove any material from any landfill without the consent of the owner. (R. O. § 24.260, amend. by Ord. No. 21317, 4-18-57)

Sec. 16.71. Penalty.

Any person violating any of the provisions of this article shall be deemed guilty of a misdemeanor and, upon conviction, shall be subject to a fine of not less than one dollar ($1.00) nor more than one hundred dollars ($100.00). (R. O. 1956, § 24.300)

[The next page is 1633]

APPENDIX F

Specifications for Polyethylene Refuse Bags

SPECIFICATIONS
FOR
POLYETHYLENE REFUSE BAGS

SECTION 1 - GENERAL

1.00 SCOPE: These specifications cover the sanitation and public health requirements for polyethylene bags intended for indoor and outdoor storage of dry, wet, and flammable refuse.

1.01 MINIMUM REQUIREMENTS: These minimum specifications are required to make the bags resistant to wear, tear resistant, and to effect sanitation.

1.02 ALTERNATE MATERIALS: Whenever specific materials are mentioned, it is understood that the use of materials proven to be at least equal, from the standpoint of performance and sanitation, may be permitted.

SECTION 2 - DEFINITIONS

2.00 BAGS: The word "bag" shall be used in the context of these criteria to mean "Refuse Bags".

2.01 CO-POLYMER (Polymer): A compound formed by the reaction of simple molecules having functional groups that permit their combination to proceed to high molecular weights under suitable conditions. Polymers may be formed by polymerization (addition polymer) or polycondensation (condensation polymer). When two or more monomers are involved, the product is called a copolymer.

2.02 ETHYLENE PLASTICS: Plastics based on resins made by the polymerization of ethylene with one or more other unsaturated compounds, the ethylene being in greatest amount by weight.

2.03 POLYETHYLENE: A plastic or resin prepared by the polymerization of ethylene as essentially the sole monomer.

2.04 REFUSE: "Refuse", for the purpose of this criteria, shall include putrescible and nonputrescible solid wastes consisting of organic or nonorganic materials, but shall not include human body waste nor industrial processing wastes.

SECTION 3 - MATERIALS

3.00 RESIN: Film for bags shall be manufactured from virgin polyethylene or ethylene copolymer resin.

3.01 FILM: Film produced from the resin specified in Item 3.00 shall comply with the following:

3.011 Dart impact strength at fold and seals shall not be less than 60 grams when tested in accordance with ASTM D-1709-67, Method A.

3.012 The gauge of the film shall be 2.00 mills. Point-to-point variation shall not exceed ± 20 percent of specified 2.00 mill gauge.

NOTE: This requirement is not intended to preclude the use of nominal wall thickness in excess of specified gauges; however, the ± 20 percent mentioned shall apply to said wall thickness specified.

3.013 Inspection of end item. Visual examination of the end item is for fefects in appearance, construction, assembly, and general workmanship.

Defects usually categorized as reducing the quality of the product are: non-uniformity, pinhole, streak, tear, hole, porous, blister, scratches, mottling, wrinkles, fold, foreign matter, fish eye, gel as well as edge nicks, and cuts. (Reference Federal Specification L-P-378 b, February 6, 1967, Section 4.2)

SECTION 4 - BAGS

4.00 DIMENSIONS: The bags shall have a minimum circumference of 62 inches and a minimum inside length dimension of 40 inches.

4.01 SLIP COEFFICIENT: The bags shall be readily opened by hand and shall have a slip coefficient between 0.1 and 0.25, when tested in accordance with ASTM D-1894.

4.02 HEAT SEAL: Any heat seal shall withstand a ten minute tensile loading of one pound/inch of seal without failure.

4.03 DROP RESISTANCE*: Securely closed bags shall withstand a drop of five (5) feet onto smooth concrete when filled to a total weight of forty (40) pounds with a material having a density of fifteen (15) pounds per cubic foot.

4.04 WEIGHT: The bags, exclusive of packaging and ties, shall have a minimum weight of 165 pounds per 1,000 bags for 2.00 mill thickness. Each 30-bag package shall have a minimum weight of 4.95 pounds, exclusive of packaging and ties and each 40-bag package shall have a minimum weight of 6.6 pounds exclusive of packaging and ties.

4.05 CLOSURES: Each package of bags shall contain an equal quantity of wrapped seven (7) inch minimum wire closures or their equivalent.

4.06 LEAK-PROOF SEALS: All seals will be constructed in a manner that will prevent the bag from leaking.

* The complete details of the test method used is available from the National Sanitation Foundation, 2355 West Stadium Boulevard, Ann Arbor, Michigan 48103.

SECTION 5 - CLASSIFICATION AND COLOR

5.00 TYPE: The polyethylene refuse bags covered by this specification shall be of the following type:

5.001 Tinted, opaque, gusseted or non-gusseted, open-top bag.

5.002 Each bag shall be tinted in solid green color. Sample tint shall be prepared and approved before production of contract supply begins.

SECTION 6 - PRODUCTION RUN

6.00 PRODUCTION RUN: Each production run shall be identifiable on each shipping pallet or on each shipping carton containing packages. Prominent markings which show the month and year of manufacture together with the production run, manufacturer's code, and City purchase order number are required.

7.00 PACKAGING: The method of packaging of the bags is to provide suitable protection against the elements and protection in handling at the retail outlet and/or optional pitch delivery to the individual householder. The packaging material is to be sufficiently strong to resist breaking during handling. Each package is to contain thirty (30) bags, unless otherwise specified by the city (Reference Section 11). Each package will have the provision for simple, successive, and individual bag removal as needed. Each package will provide the specified number of bags together with an equal number of wire ties, or acceptable equal, so positioned as to be accessible with the removal of the first and/or succeeding bag.

The packaged bags will be grouped into handling units no not to exceed 60 pounds. The handling unit shall be palletized (Reference Section 9.02).

7.01 METHOD OF PACKAGING: Prior methods of packaging found acceptable were as follows: Boxes, and sleeving. Other packaging techniques would be considered.

7.02 ADVERTISING: No advertising or manufacturer's name or trademark shall be in evidence on the package.

SECTION 8 - TESTING AND STANDARDS

8.00 SAMPLING AND INSPECTION: Procedures will be based on an acceptable quality level of 2.5 and an inspection level of S-2 as provided in Military Standard 105D "Sampling Procedures and table for Inspection by Attributes."

8.01 APPLICABLE STANDARDS AND PUBLICATIONS:

- 8.011 Plastics Methods of Testing: Federal Test Method STD #406.
- 8.012 Plastic sheet and strip (polyolefin): Federal specification LP-378b.
- 8.013 American society for testing and material standards. Test for tensile properties of thin plastic sheeting D-882-67. Measuring flow rates of thermoplastics by extrusion plastometer D-1238-67. Test for impact resistance of polyethylene film by the free-falling dart method D-1709-67.

8.02 FAILURE: Depending on the lot or batch size, the number of sample (s) selected to be examined for conformance to AQL

(Section 8.00) will be measured for dimension, finish, and seam integrity under the normal sampling intent. Further, sample packages will be examined with respect to weight and number of bags contained therein to assume conformance to AQL.

Rejected units may be repaired or corrected and resubmitted for inspection with the approval of and in a manner specified by the City of Kansas City (reference paragraph 10.01).

SECTION 9 - DELIVERY

9.00 LOCATION: Delivery point will be to the Public Works warehouse located at 1815 North Manchester Trafficway, Kansas City, Missouri. There is no rail siding adjacent to this location. Shipments will be accepted only between the hours of 7:00 A.M. and 3:00 P.M., Monday thru Thursday.

9.01 QUANTITIES: Basic delivery unit is the package; quantities will refer to quantity of packages.

9.011 Delivery: The initial delivery will be made eight (8) weeks after receipt of order. Subsequent deliveries are expected in four (4) week increments.

9.012 Target Dates: Delivery target dates are as follows:

1) February 28, 1973 for 50,000 packages
2) Four (4) weeks later 50,000 packages
3) Four (4) weeks incremental delivery of 50,000 packages until order is filled.

9.02 PALLETIZING: Packaged bags will be Palletized on standard GMA pallets (48" x 40"). Quantities of packages (Section 7.00) are to be fastened securely upon wood pallets suitable for fork lift stacking pallets two high. The total weight of pallet and boxed packages shall not exceed 4,000 pounds.

SECTION 10 - PAYMENT

10.00 PAYMENT: Payment of invoices for delivered and accepted shipment of bags will be made on completion of each monthly delivery schedule, or as approved by the City of Kansas City Purchasing Agent. A packing list is mandatory with each shipment. Absence of the packing list and/or absence of identification of shipping units as required herein is cause for rejection of the shipment at supplier's expense.

10.01 DEFECTIVE BAGS: Bag lots failing to meet the Testing and Standards requirements will be deducted from their invoices for payment. The contractor will immediately replace bag lots failing test requirements with equal quantities meeting these specifications. Bags failing test requirements will be removed at the contractor's expense within ten (10) days after notification of failure. Replacement bags will be billed on the next succeeding invoice or one month after the end of the contract.

10.02 AMOUNT: Amount of payment shall be based upon unit price bid as proposed for the particular bag package furnished as specified and requested.

11.00 PACKAGES: First shipment of the bags to be furnished under terms of this contract shall consist of packages containing thirty (30) bags each.

11.001 The City may elect to require packages containing forty (40) bags each, as set forth in the Proposal, by officially notifying the contractor.

11.002 In no case will the City request number of bags per package change in other than full shipment lots as specified in Section 9.012.

The contractor agrees to provide refuse bags under the terms and conditions of these specifications according to the following prices:

	UNIT PRICE	EXTENSION
BASIC PROPOSAL: 2.00 mill gauge, 30 bags per package	Green. . .	
ALTERNATE NO. 1 Any portion of contract furnished as provided by Section 11.001 2.00 mill gauge bags, 40 bags per package	Green . . .	

APPENDIX G

Private Contractor Specifications and Contract Documents for Refuse Collection Routes

RETURN WITH BID

Set No. 4

SPECIFICATIONS
AND
CONTRACT DOCUMENTS
FOR
REFUSE COLLECTION ROUTES

DEPARTMENT
OF
PUBLIC WORKS

CITY OF KANSAS CITY, MISSOURI

Myron D. Calkins

MYRON D. CALKINS, P.E.
DIRECTOR

March, 1973

THE BIDDER'S ATTENTION IS DIRECTED TO THE FOLLOWING CHANGES IN THIS YEAR'S GENERAL PROVISIONS AND COLLECTION SPECIFICATIONS:

General Provisions

Section VII, DEFINITION & TERMS, page G-7
Section XLI, EQUAL EMPLOYMENT OPPORTUNITY, page G-20

Collection Specifications

Section V, BULKY RUBBISH, page C-2
Section XIV, COMPLAINTS, pages C-7, 8
Section XVI, DISPOSAL SITES, pages C-9, 10
Section XVII, COLLECTION TRUCKS, page C-11
Section XVIII, PENALTIES, page C-12
Section XX, WHITE GOODS, page C-14

GENERAL
TABLE OF CONTENTS

Division	Pages
Notice to Bidders	N: 1-2
General Provisions	G: 1-26
Collection Specifications	C: 1-14
Proposal	P: 1-9
Agreement	A: 1-4
Performance Bond	B: 1-2

NOTICE TO BIDDERS

DEPARTMENT OF PUBLIC WORKS
KANSAS CITY, MISSOURI

Sealed proposals will be received by the Director of Public Works at his office on the 20th floor of the City Hall, Kansas City, Missouri until

TWO O'CLOCK P.M. ON MARCH 16, 1973

to furnish all labor, equipment, materials, tools, insurance, supervision and all other items incidental thereto and to perform all work necessary and specified, in the prescribed manner and time, to provide the service of collecting residential refuse from buildings housing less than seven dwelling units within certain collection zones and other refuse collection as specified.

Immediately after the time above mentioned and on the 25th floor of City Hall, all proposals received will be publicly opened and read aloud.

Service is scheduled to begin May 1, 1973, subject to confirmation of the exact official starting date as set forth in the Notice to Proceed.

Payment for this service is to be made in CASH out of funds provided for this purpose.

This proposal is subject to the conditions in Article X, Section 26.222 and 26.228, Code of General Ordinances regarding Equal Opportunity in Employment including Affirmative Action Program submission.

Map, specifications, form of proposal and other contract documents for said work may be seen at the office of the Director of Public Works, 20th floor, City Hall, Kansas City, Missouri. Documents necessary for bidding may be obtained from the same office upon receipt of a Specifications Deposit in the amount of ten ($10.00) dollars per set. The deposit will be accepted only in the form of a check made payable to the City of Kansas City, Missouri. The Specifications Deposit will be refunded upon receipt of a valid bid or upon return of the Specifications Documents within ten (10) days after the opening of bids.

The Refuse Collection Zone Map of the City which is part of the specifications and contract documents, delineates collection zones for which bids are requested. Detail maps and aerial photographs of collection areas are not a part of the specifications but may be seen during regular office hours at the Director's Office.

A proposal from any contractor in default with the City on any previous contract will not be considered.

No proposal shall in any manner be conditioned, and the submission of such a conditioned proposal shall be cause for its rejection.

A proposal will not be considered unless accompanied by a certificate from the Director of Finance or the Commissioner of Property and Insurance certifying that an annual bid bond is on file covering the amount required, or unless accompanied by a Certified Check or a Cashier's Check drawn on a solvent bank. The amount of the Bond or Check shall be one thousand five hundred ($1,500) dollars times the number of collection zones included in his bid.

By virtue of statutory authority, a preference will be given to materials, products, supplies, provisions, and all other articles produced, manufactured, made or grown within the State of Missouri.

The contract will be awarded to the lowest and best bidder, but the right is reserved to reject any and all proposals.

Myron D. Calkins

Myron D. Calkins
Director of Public Works
of Kansas City, Missouri

PUBLISHED February 26,27,28 and March 1, and 2, 1973

TABLE OF CONTENTS
FOR
GENERAL PROVISIONS

No.	Section	Page
I	Scope of Work	G-1
II	Location of Area	G-1
III	Performance Bond	G-1
IV	Contract Approval	G-2
V	Execution of Contract Documents	G-2
VI	Permits	G-2
VII	Definitions and Terms	G-2
VIII	Contents of Proposal	G-7
IX	Examination of the Site of the Work	G-7
X	Interpretation of Contract	G-8
XI	Addendum	G-8
XII	Number of Dwelling Units	G-8
XIII	Qualification of Bidder	G-9
XIV	Preparation of Proposal	G-9
XV	Delivery of Proposal	G-11
XVI	Bidder's Deposit with Bid	G-11
XVII	Release of Bidder's Deposit	G-11
XVIII	Withdrawal or Revision of Proposal Prior to Bid Opening	G-12
XIX	Familiarity with Laws and Ordinances	G-12
XX	Irregular Proposals	G-13
XXI	Opening of Bid Proposals	G-13
XXII	Acceptance or Rejection of Proposals	G-13
XXIII	Payments	G-14
XXIV	Bidder's Certification	G-15
XXV	Award of Contract	G-15
XXVI	Award of Contract Confirmed by City Council	G-16
XXVII	Execution of Contract	G-16
XXVIII	Bond and Insurance	G-16
XXIX	Failure to Execute Contract	G-17
XXX	Verbal Agreements	G-17
XXXI	Materials Furnished by the City	G-17
XXXII	Laws to be Observed	G-17
XXXIII	Performance Bond	B-17
XXXIV	Contractor to Indemnify City	C-18
XXXV	Public Convenience and Safety	G-18
XXXVI	Taxes	G-18
XXXVII	Insurances	G-18
XXXVIII	Workmen's Compensation and Employer's Liability	G-19
XXXIX	Automobile Liability	G-20
XL	General Liability	G-20
XLI	Equal Employment Opportunity	G-21
XLII	Personal Liability of Public Officials	G-22
XLIII	City Not Liable for Delay	G-23
XLIV	Collection Schedule	G-23
XLV	Notice to Proceed and Prosecution of Work	G-23
XLVI	Character of Workmen and Work	G-23
XLVII	Assigning or Subletting the Contract	G-24
XLVIII	Breach of Contract	G-24
XLIX	Term of Contract	G-26
L	Ordinance and Regulations	G-26

GENERAL PROVISIONS

I. SCOPE OF WORK. The work is to provide the Public Service of collection of residential refuse from buildings housing less than seven dwelling units and such other establishments as specifically directed. The work of providing this service shall include furnishing all labor, equipment, tools, materials, insurance, supervision, and all other items incidential thereto and to perform all work necessary to complete the work as specified, and in the prescribed manner and time, for the collection of residential refuse within the refuse collection zone stated below.

II. LOCATION OF AREA. The refuse collection service to be provided under this Contract shall be in the zone noted in the proposal and numbered in accordance with the attached map.

III. PERFORMANCE BOND. The amount of the performance bond shall be the sum of Three Thousand Dollars ($3,000.00) times the number of residential collection zones for which the Contract is awarded. In lieu of the performance bond required herein, the contractor may enter into an agreement with the City, to be prepared to the satisfaction and approval of the City Counselor and the Director of Finance, that such contractor shall make a cash deposit in cash or in negotiable government securities equal at all times in market value to the face amount of the bonds. Such agreement shall provide that the cash or negotiable securities may be claimed by the Director under the same circumstances as provided for use of the Performance Bond as detailed in Section XXXIII. The bond or the cash or security deposit shall remain in effect for the entire term of the contract. If the contract is renewed, a performance bond in the amount stated above or the cash or security deposit shall be furnished for this renewal period and each subsequent renewal period.

IV. CONTRACT APPROVAL. This Contract is of the nature which will require approval of the City Council.

V. EXECUTION OF CONTRACT DOCUMENTS. The Contractor shall execute five (5) copies of the Contract Agreement and five (5) copies of the Performance Bond. Three (3) copies of Certificate of Insurance with coverage as designated herein shall be provided. One copy of all other forms required for the execution of the contract will be sufficient.

VI. PERMITS. Before starting work the contractor shall obtain and pay for all necessary permits and licenses whether issued by State, County or City, and furnish proof of issuance, all as required for the work under this contract. He shall be held responsible for all violations of the law for any cause in connection with the work.

VII. DEFINITIONS AND TERMS. Wherever the following definitions and terms or pronouns in place of them, are used in these specifications, or other contract documents, the intent and meaning shall be interpreted as specified in this section:

ADDENDUM. An addendum is a formal written notice of additions, deletions, modifications or explanations of other contract documents from the Director to bidders in advance of the bid date.

AMOUNT OF THE BID. For the purpose of awarding the contract, the amount of the bid shall be the total amount shown as the sum of the Itemized Proposal.

AMOUNT OF THE CONTRACT. The estimated amount of the contract shall be twelve (12) times the amount of the bid. The final amount of the contract shall be the total of the monthly amounts paid to the contractor.

BIDDER. A bidder is any individual, firm, partnership, corporation or association licensed or otherwise authorized by law to do business in Missouri, submitting a proposal for the work, acting directly or through a duly authorized representative.

BIDDER'S DEPOSIT. The Bidder's Deposit is a deposit of an approved Bid Bond, Cashier's Check, or Certified Check furnished by the Bidder and made payable to the City Treasurer for the amount stipulated in the Notice to Bidders as a proposal guarantee of good faith to enter into the contract.

BULKY RUBBISH. Items of rubbish either too large or too heavy to be loaded in refuse collection vehicles with safety and convenience by refuse collectors, with the equipment available therefor.

CERTIFICATE OF THE DIRECTOR OF FINANCE. The Certificate of the Director of Finance is the signed approval of said Director verifying the deposit of a satisfactory certified check, cashier's check or money order.

CHANGE ORDER. Change Order is a written order issued by the Director for changes in the work. Such Change Orders will be prepared on a standard form issued by the City and will set forth the nature of the change and the method of payment.

CITY, OR OWNER. City, or Owner, shall mean the City of Kansas City, a chartered municipal corporation of Missouri.

COLLECTION. Removal and transportation of refuse from its place of storage to its place of processing or disposal.

COMBINED REFUSE. Refuse containing both garbage and rubbish.

CONTRACT, OR CONTRACT DOCUMENTS. Contract and Contract Documents have the same meaning.

The contract consists of the following: Notice to Bidders, Special Provisions, Collection Specifications, Addenda, Proposal, Agreement, Performance Bond, Collection Zone Map, Insurances, Notice to Proceed and Change Orders. These form the agreement whereby the contractor will furnish all labor, equipment, tools and materials, and perform all work necessary to satisfactorily accomplish the proposed City service.

CONTRACTOR. The term Contractor shall mean the individual, firm, partnership, joint venture corporation, or association contracting with the City to perform the work.

DIRECTOR. The term Director shall mean the Director of the Public Works Department, or his duly authorized representative.

DIRECTOR OF FINANCE. The Director of Finance shall mean the Director of Finance of the City.

DISPOSABLE REFUSE CONTAINER. Refuse container specifically designed to be used only one time, and to be disposed of together with its refuse contents.

DWELLING UNIT. Any room or group of rooms located within a dwelling, and forming a single habitable unit with facilities which are used, or are intended to be used, for living, sleeping, cooking and eating.

ENGINEER. The term Engineer shall mean the Operations Engineer or any Engineer, or person designated by the Director in responsible charge of the work, or his authorized agent.

EXTRA WORK. Extra Work is work over and above that called for in the contract.

GARBAGE. Putrescible animal or vegetable wastes resulting from the handling, preparation, cooking, serving or consuption of food.

HOUSEHOLD REFUSE. Refuse, as defined herein but limited to those solid wastes normally generated inside the dwelling unit or household. It shall include such items as food wastes, cans, bottles, papers, etc. but shall not include yard trimmings, furniture, appliances, etc.

NOTICE TO BIDDERS. The Notice to Bidders is a formal announcement of proposed City improvements, advertising the time and place for receiving bid proposals.

NOTICE TO PROCEED. The Notice to Proceed is a written notice to the contractor issued and signed by the Director or his authorized agent stating the date on, or before which the contractor is to begin the work. The date set forth in this notice shall be considered as the official starting date, and the contract time shall be computed from this date.

PERFORMANCE BOND. Performance Bond, is the approved form of security furnished by the contractor and his surety, as required in the contract.

PROPOSAL. The proposal is a properly signed and guaranteed written offer of the bidder to perform the work. It shall be prepared on forms furnished by the City.

REFUSE. Unwanted or discarded waste materials in a solid or semi-liquid state, consisting of garbage, rubbish, or a combination thereof.

REFUSE CONTAINER. Receptable used by any person to store refuse during the interval between refuse collections.

RESIDENTIAL GARBAGE. Garbage produced at houses, apartments or other dwelling units.

RESIDENTIAL REFUSE. Refuse resulting from the maintenance and operation of houses, apartments or other dwelling units.

RESIDENTIAL RUBBISH. Rubbish resulting from the maintenance and operation of houses, apartments or other dwelling units.

RUBBISH. Non-Putrescible solid wastes consisting of combustible and non-combustible waste materials from residential apartment, commercial, industrial and institutional establishments, including yard wastes and items commonly referred to as "trash".

SPECIAL PROVISIONS. The Special Provisions are contract requirements peculiar to the project which compliment, supplement or modify the contract, and shall immediately follow the Notice to Bidders. In case of conflict with the standard specifications, the Special Provisions shall govern, except for addenda which supercede all previous documents.

SPECIFICATIONS. The Specifications are the complete directions, provisions, and requirements contained in the Special Provisions, Standard Specifications, Addenda, Change Orders, and Supplemental Agreements as may be necessary to describe the work, and the service, which is to be furnished under the Contract.

STANDARD SPECIFICATIONS. Standard specifications shall mean the officially adopted "Standard Specifications for Kansas City, Missouri" as adopted by the Department administering the contract.

STREET OR ALLEY. The whole area within the legally established street or alley right-of-way limits.

SUB-CONTRACTOR. Sub-Contractor is any individual, firm, partnership, corporation, or association licensed or otherwise authorized by law to do business in Missouri, to whom the Contractor, with written consent of the City, sublets a part of the work.

SURETY. Surety shall mean the corporation, partnership or individual, duly licensed and authorized to do business in Missouri, who is bound with and for the Contractor to assume legal liability for the faithful performance of the contract.

WHITE GOODS. White goods shall mean bulky rubbish which is too large or too heavy to be loaded in refuse packer vehicles, such as, but not limited to, discarded household and lawn items.

"WORK" OR "THE WORK". Work or the work shall mean the furnishing of all labor, materials, equipment and other incidentals necessary for the successful completion of the contract and the carrying out of all duties and obligations imposed by the contract.

ZONE MAP. The Zone Maps are the official maps showing the location and boundaries of the refuse collection (R. C.) Zones.

VIII. CONTENTS OF PROPOSAL. Prospective bidders will be furnished proposal forms which will state the location and description of the proposed service.

The proposal form will include an estimate of the number of dwelling units to which refuse collection service will be provided for which a monthly unit price is requested.

IX. EXAMINATION OF THE SITE OF THE WORK. By the submission of a proposal on the work, the bidder represents that he has carefully examined the collection zone, the disposal sites, specifications, and all other contract documents, and that the bidder is fully informed concerning the requirements of the contract, the physical conditions to be encountered in the work, and the character, quality, and the quantity of service to be performed, and of materials and equipment to be furnished. The contractor will not be entitled to additional compensation if he subsequently finds that conditions require methods or equipment other than that anticipated by him in making his proposal. Negligence or inattention of the Contractor in determining site conditions prior to filing his bid, in any phase of his performance of the work, shall be grounds for refusal by the Director to agree to additional compensation for additional work caused by such negligence or inattention.

X. INTERPRETATION OF CONTRACT. If any prospective bidder is in doubt as to the true meaning of any parts of the contract, he may request an interpretation from the Director. Any interpretation of the contract will be made only by an addendum duly mailed or delivered to each prospective bidder who received a set of contract documents. In order to have a request for interpretation considered, the bidder must deliver the request to the Director by not less than seven (7) days before the bid date.

XI. ADDENDUM. The bidder shall sign each addendum issued and attach it to his proposal in order to have his bid considered.

XII. NUMBER OF DWELLING UNITS. The number of dwelling units, for which collection service is to be provided under this contract as stated in this proposal, are approximate and do not constitute a warranty or guarantee by the City as to the exact number to be served. The successful bidder for each collection zone will be furnished a list of the individual addresses of the dwelling units eligible for the collection service at the date of the contract. Payment for each month's service shall be determined by applying the contract unit price bid for collection refuse per month per dwelling unit, to the actual number of dwelling units from which refuse was collected during that month as adjusted each two months and as determined by the Director.

XIII. QUALIFICATION OF BIDDER. The bidder must be qualified by experience, adequate financing and equipment to do the work called for in the contract. Records of prior experience as a city contractor will be considered. Section 472 of the City Charter provides as follows: No officer or employee of the City shall have a financial interest, direct or indirect, in any contract with the City, or be financially interested, directly or indirectly, in the sale to the City of any land, materials, supplies, or services except on behalf of the City as an officer or employee. Any willful violation of this section shall constitute malfeasance in office, and any officer or employee found guilty thereof shall thereby forfeit his office or position. Any violation of this section with the knowledge, expressed or implied, of the person or corporation contracting with the City shall render the contract involved voidable by the City Manager or the Council.....

XIV. PREPARATION OF PROPOSAL. Proposals shall be legibly written in ink, or typed on the forms furnished by the City, and shall be completely executed by the bidder in ink with his full signature. The bidder shall indicate whether he is an individual, partnership, joint venture, Missouri corporation or a foreign corporation, and enter the correct name of this bidder. The business address of the bidder shall be typed or printed on the proposal. The proposal shall be signed by an authorized agent. If submitted by a corporation, the proposal must be signed by the President and Secretary, or by other officers authorized by a resolution of the Board of Directors with a copy of the resolution accompanying the bid. When unit prices are requested, they shall be submitted on each and every item of work included for which bids are requested. Any omission of prices on such items shown on the proposal forms, or any addition in writing to the form of the bid, or any condition, limitation, or provision, will render the proposal informal and may cause its rejection.

The bidder shall state on the itemized proposal form the unit price bid for collection of residential refuse in the refuse collection zone stipulated for this contract, without consideration of being awarded the contract for any other refuse collection zone. On the alternate proposal form, the bidder shall show the amount of adjustments to be made in the unit bid price for this refuse collection zone, if he is awarded the contracts for refuse collection in this collection zone in combination with any other refuse collection zone or zones. The bidder shall clearly and accurately state on the alternate proposal form which collection zone or zones are to be considered in this alternate or alternates. Bids must be made on the basis of collection provided for the complete collection zone stated in the proposal. Alternate bids, other than as stated above, or other terms or conditions by the bidder may result in the bid being considered informal and subject to rejection.

XV. DELIVERY OF PROPOSAL. Each bidder will be supplied two copies of the proposal form. One copy shall be retained by the bidder for his record, and one copy shall be used for bidding and shall be placed in the special bid envelope furnished by the City and deposited with the Director on or before the time and at the place set forth in the Notice to Bidders. It is the sole responsibility of the bidder to see that his bid proposal, bearing the certificate of the Director of Finance is delivered in time. Any bid received after the scheduled closing time for the receiving of bids will be returned to the bidder unopened and will not be considered.

XVI. BIDDER'S DEPOSIT WITH BID. A proposal may not be considered unless accompanied by a certificate from the Director of Finance or the Commissioner of Property and Insurance certifying that an annual bid bond for the amount required, or unless accompanied by a bid bond for the project being bid, or unless accompanied by a certified check or a cashiers check drawn on a solvent bank. Such deposit shall be a guarantee that the bidder, if awarded the contract, will furnish a Performance Bond, and execute the contract. If the bidder fails, refuses, or neglects to execute the contract and furnish the required bond, the owner may retain the deposit or cash the certified check or enforce the bid bond as compensation for liquidated damages for the bidder's breach.

XVII. RELEASE OF BIDDER'S DEPOSIT. After the bids are opened, checked and duly considered, the Director will notify the Director of Finance to release bidder deposits as follows:

A. BIDDERS OTHER THAN LOWEST THREE. The bid deposit of all except the lowest three (3) bidders will be released within three (3) days after the determination of the lowest three (3) bidders.

B. SECOND AND THIRD LOWEST BIDDER. The bid deposit of the remaining two (2) unsuccessful bidders will be released within three (3) days after the successful bidder has executed the contract.

C. SUCCESSFUL BIDDER. The bid deposit of the successful bidder will be released as soon as possible after the executed contract has been delivered to and approved by the Director.

D. BIDS REJECTED. If all bids are rejected, all bid deposits will be returned within three (3) days after such rejection.

XVIII. WITHDRAWAL OR REVISION OF PROPOSAL PRIOR TO BID OPENING. A bidder may, without prejudice to himself, withdraw, modify, or correct his proposal after it has been deposited with the Director, provided his request is made in writing to the Director. Any revised bid shall be deposited prior to the closing time set for receiving bids. Modification, or corrections of proposals may be made on the withdrawn proposal or by means of telegrams o other written communications, provided such modifications or corrections are received by the Director prior to the closing time set for receiving bids.

All modifications or corrections made by telegram or other written communications received on time will be opened in public and read aloud prior to the opening of bids. When such modifications or corrections are in order and acceptable to the Director, changes will be made in the respective proposals in accordance with the communications.

XIX. FAMILIARITY WITH LAWS AND ORDINANCES. The submission of a proposal on the work shall be considered as a representation that the bidder is familiar with all Federal, State and local laws, ordinances, and regulations which affect those engaged or employed in the work, or equipment used in the work, or which in any way affect the conduct of the work, and no plea of misunderstanding will be considered on account of ignorance thereof. If the bidder or contractor discovers any provisions in the specifications, or contract documents which are contrary to or inconsistent with any law, ordinance, or regulation, he shall report it to the Director in writing without delay.

XX. IRREGULAR PROPOSALS. Proposals may be rejected which are not submitted on the forms furnished the bidder by the City. No alterations in proposals will be acceptable unless each alteration is signed or initialed by the bidder; if initialed, the City may require the bidder to identify any alterations so initialed. A bid may be rejected in which omissions occur, or which has been conditioned by the bidder, or wherein the alterations are unacceptable to the owner.

XXI. OPENING OF BID PROPOSALS. At the time and place set forth in the Notice to Bidders, bids will be opened and read aloud. Bids not accompanied by the certificate of the Director of Finance, or an approved Bid Bond, or a certified check, or a cashier's check drawn on a solvent bank may not be accepted.

XXII. ACCEPTANCE OR REJECTION OF PROPOSALS. The City reserves the right to accept the bid proposal which, in the judgment of the Director, is the lowest and best bid, to reject any and all bids, and to waive irregularities in the bid proposals.

More than one proposal for a bid area from an individual, a firm, a partnership, a corporation, or any association under the same or different names, will not be considered. When reasonable evidence exists that any bidder is interested in more than one bid proposal, for the same refuse collection zone, it may cause the rejection of all bid proposals in which such bidder is interested.

Any or all proposals will be rejected if there is reason to believe that collusion exists among the bidders. Proposals received from participants in such collusion will not be considered for the same work when and if re-advertised. Proposals may be rejected from bidders who are in default on a previous contract with the owner.

XXIII. PAYMENTS.

A. The City agrees to pay the contractor for all services and labor as herein stated for the collection of residential refuse for the sums as bid on the bid proposal, subject to adjustment as provided in Paragraphs B and C herein. One invoice per month will be submitted to the City as of the same date each month, beginning one month after the starting date set forth in the Notice to Proceed; and will be paid by the City directly to the contractor not later than fifteen (15) days after receipt. The initial amount paid to the contractor shall be based upon the number of residential dwelling units served within the zone covered by this contract at the time of commencement of service.

B. An initial adjustment of numbers of dwelling units as estimated on the bid proposal may be required before submission of the first invoice. Dwelling unit counts as estimated on the bid proposal do not include presently exempt homes associations or clustered multi-family housing and are accurately counted. Presently exempt homes associations that may elect to receive City operated refuse collection and disposal services will increase the dwelling unit counts indicated in the proposal. The bid award will be based upon the dwelling unit count in the bid proposal.

The successful bidders will be furnished an address listing of the eligible dwelling units in each collection zone. The address listing is the basis on the dwelling unit counts and will not include homes associations exempted from City service or clustered multi-family housing not eligible for City service.

C. Regular adjustments of the amount of compensation to be paid to the contractor shall be made as follows:

The compensation to the contractor shall be adjusted bi-monthly on the basis of increase or decrease in the number of accounts serviced. The change in compensation to the contractor shall be effective at the end of each two month period as measured from the official starting date as set forth in the Notice to Proceed.

XXIV. BIDDER'S CERTIFICATION.

By the submission of his proposal, the bidder certifies that his bid is genuine and is not made in the interest of, or in behalf of, any undisclosed person, firm or corporation, and is not submitted in conformity with any agreement or rules of any group, association, organization or corporation; that he has not directly or indirectly induced or solicited any other bidder to put in a false or sham bid; that he has not solicited or induced any person, firm or corporation to refrain from bidding; and that he has not sought, by collusion or otherwise, to obtain for himself any advantage over any other bidder or over the City.

XXV. AWARD OF CONTRACT.

The award of a contract, if made, will be made to the lowest and best bidder. No award will be made until all necessary investigations have been made by the Director to determine the responsibility of the bidder under consideration. After opening the bid proposals the Director may require the lowest three (3) bidders to submit a financial statement, an experience record, and a list of additional equipment available for prosecution of the work. The Director will be the sole judge as to the responsibility of the bidder to satisfactorily perform the work specified within the contract time. No bidder may withdraw his bid until thirty (30) calendar days after the date of opening bids.

XXVI. AWARD OF CONTRACT CONFIRMED BY CITY COUNCIL.

As soon as practicable and not later than ten (10) calendar days after opening the bids, the Director will notify the apparent successful bidder of the award and provide properly prepared contract documents which the contractor, after his proper execution of the same, shall return to the Director for submission to the City Council for confirmation.

In the event the properly executed contract documents are not confirmed by the City Council within forty-five (45) calendar days after their return to the Director, the contractor may request that he be released from the contract obligation and that his Performance Bond be released, in which case the Director shall release the contractor's Performance Bond.

The foregoing action by the Director or the contractor shall in no way provide any cause whatsoever for claim against the City by the Contractor.

XXVII. EXECUTION OF CONTRACT. Within ten (10) calendar days after notification of award of contract, the bidder to whom the award is made shall execute the number of copies of the contract documents specified and submit them to the Director, and shall furnish a Performance Bond and other required bonds and insurances satisfactory to the City.

XXVIII. BOND AND INSURANCE. Coincident with the execution of the contract, the contractor shall furnish a Performance Bond, and insurances acceptable to the Director of Finance, in accordance with the requirements of General Provisions Sections III, XXXIII, XXXVII, XXXVIII, XXXIX, and XL.

XXIX. FAILURE TO EXECUTE CONTRACT. It is agreed by the bidder that upon his failure to enter into the contract and furnish the necessary Performance Bond, within ten (10) calendar days, the amount of the Bidder's Deposit previously placed with the Director of Finance shall become the property of the City and will be retained, not as a penalty but as liquidated damages. The award of the contract may then, at the discretion of the Director, be made to the next lowest responsible bidder, or the work may be re-advertised, or may be performed by the City in any legal manner.

XXX. VERBAL AGREEMENTS. No verbal agreement or conversation with any officer, agent, or employee of the City, either before or after execution of the contract, shall affect or modify any of the terms or obligations contained in the Contract. Any such verbal agreement or conversation shall be considered as unofficial information and in no way binding upon the City or the Contractor.

XXXI. MATERIALS FURNISHED BY THE CITY. Certain customer informational materials such as schedules, regulations, violation tags, etc. shall be furnished by the City to be distributed by the contractor as specified in the collection specifications. The City will furnish and distribute disposable refuse containers to the residents.

XXXII. LAWS TO BE OBSERVED. The contractor shall at all times observe and comply with all Federal and State laws, local laws, ordinances, orders, and regulations of the Federal, State, County, or City governments.

XXXIII. PERFORMANCE BOND. The contractor shall furnish a Performance Bond to the City in the amount specified, executed by a surety; guaranteeing the faithful performance of the contract; guaranteeing the payment of all lawful claims when they become due for all labor, mechanics, equipment, tools, and materials used in the work; for the period of time as prescribed by the Performance Bond.

XXXIV. CONTRACTOR TO INDEMNIFY CITY. The Contractor shall expressly bind himself to indemnify and save harmless the City and all its representatives, agents and employees from all suits or actions of every kind and description when such suits or actions arise from acts, omissions, or the negligence of the Contractor, his servants, or his agents, including subcontractors. The Contractor shall, likewise, bind himself to indemnify and save harmless the City and all its representatives, agents, and employees for or on account of any injury or damages received or sustained by the Contractor, his servants, or his agents, including subcontractors; or on account of any claim or amount recovered for royalty or infringement of patent, trade mark, copy right, or on account of any claim or amount recovered under the Workmen's Compensation Law.

XXXV. PUBLIC CONVENIENCE AND SAFETY. The contractor shall observe City Ordinances relating to obstructing streets, keeping passageways open and protecting same, and shall obey all laws and City Ordinances controlling or limiting those engaged in the work.

The contractor is granted the privilege of using the street or streets for the purpose of doing work specified in the contract, but he is not granted exclusive use of such street or streets.

The contractor shall handle the work in a manner that will cause the least inconvenience and annoyance to the general public and to the property owners.

XXXVI. TAXES. The contractor shall pay all Federal, State and local taxes, which may be chargeable against the performance of the work.

XXXVII. INSURANCES. The contractor shall secure and maintain, throughout the duration of this contract insurances of such types and not less than amounts as hereinafter listed.

Insurance coverage will be considered acceptable when provided in one of the following methods:

A. By issuance of the original policy designating the Contractor and the City, by name, as the insured parties under the provisions of the policy.

B. By endorsement to an original policy when endorsement shall extend to the City, by name, the same coverage and protection stipulated in the paragraph above.

C. By separate contingent policy providing the required insurance coverage for the protection of the City by name.

A duplicate original of each policy shall be furnished showing specifically the coverages and limits, together with the underwriter thereof, for approval by the City. Regardless of such approval by the City, it shall be the responsibility of the contractor to maintain adequate insurance coverage at all times, and his failure to do so shall not relieve him of any contractual obligation or responsibility. Failure on the part of the contractor to maintain these insurances in full effect will be considered as a failure in contract performance and will be treated as such by the City. Satisfactory certificates of insurance filed with the Director shall state that ten (10) calendar days written notice will be given to the Director and to the surety before any policy covered thereby is changed or cancelled.

XXXVIII. WORKMEN'S COMPENSATION AND EMPLOYER'S LIABILITY. This insurance shall protect the contractor against all claims under the workmen's compensation law. The contractor shall also be protected against claims for injury, disease, or death of employees which, for any reason, may not fall within the provisions of a workmen's compensation law.

The liability limits shall not be less than the following:

Workmen's Compensation	Statutory Amount
Employer's Liability	$25,000 each person

XXXIX. AUTOMOBILE LIABILITY. This insurance shall be written in comprehensive form and shall protect the contractor against all claims for the operations of all motor vehicles, whether they are owned, non-owned, The liability limits shall not be less than the following:

Bodily injury	$100,000 each person
Bodily injury	$300,000 each occurrence
Property damage	$ 50,000 each occurrence

Such policy may be written to allow the first One Hundred Dollars ($100.00) of liability for damages to property to be deductible.

XL. GENERAL LIABILITY. This insurance shall be written in comprehensive form and shall protect the contractor against all claims arising from injuries to any person or damage to property of others arising out of any act or ommission of the Contractor, and in addition, this policy shall specifically provide contractors Protective Liability Insurance, and Contractual Liability Insurance covering the obligations stipulated below. The Contractor shall provide and maintain insurance to protect the City against any and all claims for damages for personal injury, including accidential death, as well as from claims under this contract, whether such operations be by the contractor or any of his sub-contractors, or by any one directly or indirectly employed by the Contractor or his sub-contractors. The liability limits shall not be less than the following:

Personal Injury	$10,000 each person
Personal Injury	$20,000 each occurrence

Property Damage $ 5,000 each occurrence

Property Damage $10,000 each occurrence

Such policy may be written to allow the first One Hundred Dollars ($100.00) of liability for damage to property to be deductible.

XLI. EQUAL EMPLOYMENT OPPORTUNITY. The contractor's attention is directed to all Federal and State laws and City ordinances relating to equal employment opportunity, which, among other things, requires that the contractor or franchise holder agrees not to discriminate against any employee or applicant for employment because of race, creed, color, national origin or sex.

Submission of Program: Prior to entering into any contract with or receiving any franchise from the City, all persons seeking such contract or franchise shall submit in writing to the Contracting Officer, in this case the Director of Public Works, a Certificate of Compliance or Affirmative Action Program as defined in Article X, Section 26.228, Code of General Ordinances (A copy of which may be obtained from the City Clerk, 25th Floor, City Hall). Upon request, the Director of Human Relations will furnish assistance in the preparation of such program.

If any bidder who is eligible to submit a Certificate of Compliance shall be unable to do so for reasons beyond his control, he may file an Affidavit with the Contracting Officer stating that he has filed, or is signatory to, a governmentally recognized Affirmative Action Program administered by an agency or body named in such Affidavit; that he has been subjected to a compliance review by such agency or body within the calendar year next preceding the date of the affidavit; stating the date of such review; and that he will file a copy of his Certificate of Compliance with the Director of Human Relations within thirty (30) days of the date of his Affidavit.

General: It is a condition of this contract that all contractors doing business with the City under this contract or acting in any way as a subcontractor under this contract, agree to refrain from any unlawful employment practice as presently defined in Section 26.222, revised Ordinance of Kansas City, Missouri; and that such contractors will post their premises at the office of employment, notices setting forth the provisions of Section 26.222, revised Ordinance of Kansas City, Missouri, and further setting forth that such contractor(s) agrees to implement the certification of compliance or affirmative action program submitted by him in connection with this contract, and that such contractor(s) shall be bound by the terms in Article X, Section 26.228.

Access to Information: Every contractor, or subcontractor, employed under this contract is hereby deemed to agree to permit the Director of Human Relations, his duly authorized agents or employees, access at all reasonable times to all such persons, books, papers, records, reports or accounts in possession of or under the control of such person, as may be necessary to ascertain compliance with the affirmative action program previously filed, and to furnish such further information as may be required of him, all within ten (10) days of the date requested in writing.

Failure to Comply - Breach of Contract: If a contractor shall fail, refuse or neglect to comply with the terms of these contract conditions, such failure shall be deemed a total breach of contract and the contractor shall be subject to the provisions of Article X, Section 26.228 relating to Failure to Comply.

XLII. PERSONAL LIABILITY OF PUBLIC OFFICIALS. Neither the Engineer not any of his assistant, nor any other agent of the City shall be personally responsible for any liability arising under or growing out of the contract, or operations of the contractor under the terms of the contract.

XLIII. CITY NOT LIABLE FOR DELAY. It is further expressly agreed that in no event shall the City be liable or responsible to the contractor or to any other person for or on account of any stoppage or delay in the work herein, provided for by injunction or other legal or equitable proceedings, or from or by or on account of any delay for any cause over which the City has no control.

XLIV. COLLECTION SCHEDULE. Prior to being awarded the contract, the contractor shall prepare and submit for approval a collection schedule which will insure regular weekly collection service. Adequate equipment, forces and materials shall be made available by the contractor to start work on the date ordered by the Director and to comply with the collection schedule. The collection schedule shall show the day of the week on which collection will be made at each dwelling unit in the collection zone.

XLV. NOTICE TO PROCEED AND PROSECUTION OF WORK. The contractor shall begin work on the date set in the Notice to Proceed and shall prosecute the work vigorously and continuously.

XLVI. CHARACTER OF WORKMEN AND WORK. All sub-contractors, superintendents, foremen, and workmen employed by the contractor shall be competent and careful workmen skilled in their respective trades. The Director may demand the dismissal of any person employed by the contractor, in, about or upon the work, who repeatedly misconducts himself or is incompetent or negligent in the due and proper performance of his duties, or who neglects or refuses to comply with the directions given; and such person shall not be re-employed under the contract without the written consent of the Director. Should the contractor continue to employ or re-employ any such person, the Director may withhold all monies due or which may become due the contractor, or the Director may suspend the work until such orders are complied with. The contractor shall furnish such supervision, labor and equipment as is considered necessary for the prosecution of the work in an acceptable manner and at a satisfactory rate of progress.

XLVII. ASSIGNING OR SUBLETTING THE CONTRACT. The contractor shall not assign or sublet the contract, or any portion of the contract, without the written approval of the Director; however, subletting of portions of this contract to established local refuse hauling contractors is encouraged. The Director's written approval of the contractor subletting work shall not be construed as making the City a party of such sub-contract, or subjecting the City to liability of any kind to any sub-contractor. No sub-contract shall under any circumstances relieve the contractor or his surety of his liability and obligation under the contract, and all transactions will be made through the contractor. Sub-contractors will be recognized and dealt with only as workmen and representatives of the contractor and as such shall be subject to the same requirements of character and competence as set forth in the preceeding Section entitled, "Character of Workmen and Work".

XLVIII. BREACH OF CONTRACT. If the contractor fails to begin work at the time specified, persistently disregards laws, ordinances or instructions of the Director, or repeatedly fails to provide sufficient workmen, equipment and materials to insure the proper completion of the work, or performs the work unsatisfactorily, or fails to collect refuse and other required material for any one week, or discontinues the prosecution of the work without authorization by the City, or becomes insolvent or declares bankruptcy or commits any act of bankruptcy or insolvency, or allows final judgment rising out of performance of the contract to stand against him unsatisfied for a period of ten (10) days, the Director will consider such action a breach of contract and give notice, in writing by registered mail, to the contractor and his surety of such breach. If the contractor or his surety, within ten (10) days after such notices, does not proceed to take over and complete the work under the orders of the Director, then the Director, because of the breach of contract, shall have full power and authority, without violating the contract or bond, to take over the completion of the work, to enter into agreements with others for the completion of said contract according to the terms and provisions thereof, or to use such other methods as in his opinion may be required for the completion of said contrac in an acceptable manner. Furthermore, after the issuance by the City of its notice of intention to terminate the contract; the contractor shall not remove from the City any of the equipment normally used in this contract work process until arrangements to continue the work, by contract, by the surety, or otherwise, have been completed by the City.

For all costs, charges and damages incurred by the City, together with the costs of completing the work, the Contractor and his surety shall be liable, and such costs may be deducted from any monies due or which may become due to the contractor. In case the expense incurred by the City is less than the sum which would have been payable under the contract if it had been completed by the contractor, then the contractor will be entitled to receive the difference. In case such expense exceeds the sum which would have been payable under the contract, the contractor and his surety shall be liable and shall pay the City the amount of said excess.

XLIX. TERM OF CONTRACT. Term of Contract - the term of this contract shall be for a twelve-month period beginning on the official starting date as set forth in the Notice to Proceed. There is no automatic renewal term thereafter. The City contemplates entering into new contracts at the conclusion of the twelve-month term of this contract.

L. ORDINANCE AND REGULATIONS. The contractor's particular attention is directed to the "Municipal Solid Waste Storage and Collection Ordinance of Kansas City" and to REGULATIONS FOR RESIDENTIAL REFUSE (TRASH AND GARBAGE) COLLECTION under which authority, terms and conditions the Refuse collection program is to be operated. Copies of the Ordinance and Regulations are obtainable from the City Clerk.

TABLE OF CONTENTS
FOR
COLLECTION SPECIFICATIONS

No.	Section	Page
I	Materials to be Collected	C-1
II	Residential Service and Frequency	C-2
III	Storage Containers	C-2
IV	Rubbish Too Large for Containers	C-2
V	Bulky Rubbish	C-2
VI	Place of Collection	C-3
VII	Refuse Quantities and Preparations	C-3
VIII	Non-Residential Collection	C-4
IX	Time of Collection	C-4
X	Holidays	C-4
XI	Program Indoctrination	C-5
XII	Schedules, Routes & Literature	C-6
XIII	Care and Diligence	C-7
XIV	Complaints	C-7
XV	Employees	C-8
XVI	Disposal Sites	C-9
XVII	Collection Trucks	C-11
XVIII	Penalties	C-12
XIX	Bag Distribution	C-13
XX	White Goods	C-14

COLLECTION SPECIFICATIONS

I. MATERIALS TO BE COLLECTED

The Contractor agrees to provide and furnish all labor, supervision, material, permits, licenses and equipment necessary to provide collection for occupants of specified dwelling units within the designated area of the City of Kansas City, Missouri, as follows:

1. Combined Residential Refuse - including residential garbage and residential rubbish.
2. Discarded furniture including beds, rugs, overstuffed furniture and other furniture, small appliances, bicycles, sleds, tools, and comparable materials suitable for handling in packer type collection trucks and not exceeding the limitations as to weight, volume and size as described in Item VII of the Collection Specifications.
3. Yard refuse and materials, including grass clippings, weeds, Christmas trees, bushes; brush clippings and branch clippings when sacked, bagged or securely bound in bundles.
4. White Goods if an alternate bid for such is made a part of this contract. Materials not to be collected will include large and excessive quantities of concrete, rubble and refuse from remodeling, construction or demolition of buildings, and dirt.

II. RESIDENTIAL SERVICE AND FREQUENCY

Regular weekly service: The Contractor will furnish a regularly scheduled weekly collection service using modern, packer-type refuse collection equipment approved by the Director for servicing dwelling units contained in buildings housing less than seven dwelling units in specified areas of the City.

III. STORAGE CONTAINERS

All materials to be collected will have been placed in approved tied or closed disposable refuse containers, except for items too large to fit into the containers. Residents shall not be limited as to the number of containers which they may place for collection. Collection may not be made from unapproved residential refuse containers, except as approved in Section I.

IV. RUBBISH TOO LARGE FOR CONTAINERS

Items too large for containers as referred to in Section III, such as bundles of brush or branches securely tied, bundles of papers, crates, empty cartons, smaller items of furniture, all yard trimmings and other items suitable for collection by packer-type equipment, will be placed at the curb line or roadside for collection.

V. BULKY RUBBISH

In the event the residents shall place items for collection that are too large or otherwise unsuitable for loading into packer equipment, the Contractor will notify the resident by a tag system of a special pickup arrangement required for these items. Tags will be furnished by the City and the special pickup is not a part of this contract, except the Contractor may submit an alternate proposal for the collection of such items. If awarded the proposal, then this special pick up service is a part of this contract.

VI. PLACE OF COLLECTION

Normal collection points for residential refuse shall be at the house, at ground level and outside enclosures or fences; it will not be inside buildings. Yard trimmings and materials specified in Sections IV and V will be placed for collection as noted therein.

VII. REFUSE QUANTITIES AND PREPARATIONS

Residents will not be limited in the amounts of refuse they place for disposal except as noted in previous sections and as prepared for collection as noted herein:

a) Weights. No single item, bag, box, container or bundle of refuse shall weigh more than 65 pounds.

b) Volume. Approved disposable refuse containers will be no larger than 35 gallon capacity.

c) Size. Uncontainerized rubbish will be trimmed, cut, and securely tied in bundles of less than four (4) feet in length and two (2) feet in thickness. Other oversized rubbish items not classified as bulky rubbish will be collected with other refuse on regular collection days if suitable for collection by packer equipment and if less than 65 pounds.

d) Household refuse in City approved disposable refuse containers may be placed at the house for collection. All other disposable refuse containers must be placed at the curb or roadside as required for yard rubbish and rubbish too large for containers.

VIII. NON-RESIDENTIAL COLLECTION

The Contractor will provide refuse collection service to Fire Stations and City Hall Annexes where directed at the same price bid per dwelling unit whenever said facilities operated by the City of Kansas City, Missouri are located within or adjoining designated collection areas.

IX. TIME OF COLLECTION

No Residential refuse shall be collected, taken, removed or transported from any premises in the City except after the hours of 7:00 a.m. on the day scheduled for collection. No regular collection of any residential refuse shall be made on any Sunday. Refuse will be placed for collection by the morning of collection day before passage of the collection truck.

X. HOLIDAYS

The Contractor will submit a schedule for handling collections that fall on a holiday. New Year's Day and Christmas Day will be required to be observed as non-collection days. The Contractor shall include a schedule for the remaining holidays. In order to establish a uniform holiday collection schedule after learning the Contractor's desires, the Director will approve or modify the schedule and it will be followed by the Contractor as approved or modified.

XI. PROGRAM INDOCTRINATION

The Contractor is reminded that he is an integral part of a continuing City service to which the citizens are accustomed. Therefore, the Contractor will be expected to cooperate with the City and its citizens in carrying out the basic task of collection of all residential refuse from designated dwelling units.

Based on experience of City-Contractor efforts, the source of citizen-collector misunderstandings can be generally categorized as follows:

A) Refuse placed for collection in non-disposable refuse containers,

B) Grass clippings and bundled rubbish left at the house for collection rather than at the curb,

C) Weight and sizes slightly too large,

D) Refuse placed for collection on collection day but after passage of collection vehicle,

E) Improperly bundled rubbish,

F) Placing small amounts of materials normally classified as non-collectible items out for collection. These items include but are not limited to building materials, rocks, bricks, fence posts, and other similar small items wasted in the minor maintenance of a house, and

G) Discourtesy, real or imagined, by both parties.

The example problems listed above are not the only problems to be expected.

The Contractor and his representatives will make every reasonable effort to serve the customers regardless of errors in customer refuse preparation. By use of a tag system (tags being furnished by the City) the Contractor will notify the City and the customer of the customer's repeated or gross mistakes.

The City will cooperate and encourage the customer to comply with regulations by providing instructions, public relations and educational materials both general and specific. The City will also make personal contacts with violators as the need arises or requested by the Contractor.

XII. SCHEDULES, ROUTES & LITERATURE

The successful bidder shall submit a collection schedule for approval by the Director for each collection zone he is awarded. Such schedule shall be submitted within 10 days after it is requested by the City. Schedule preparation and approval shall recognize current collection schedules to the extent that maximum time interval between last collection of old contract and first collection under new contract shall not exceed nine (9) calendar days. Maps showing current schedule may be reviewed in the Refuse Division office, 20th Floor, City Hall.

The Contractor at his own expense, shall distribute, through the United States mail or by personal delivery, route and holiday schedules and refuse regulations to each resident and City establishment from which refuse is to be collected. Said information shall be delivered not less than ten (10) days prior to the beginning of collection service.

Such notices will be prepared and furnished by the City prior to distribution by the Contractor. The Contractor will not overprint, enclose or provide any other additional information on the notice. The Contractor may distribute to his customers additional schedule and collection information, provided it is identified as City information on collection and approved by the Director.

XIII. CARE AND DILIGENCE

a) The Contractor shall exercise all reasonable care and diligence in collecting refuse. The City will encourage residents to provide and to use suitable containers.

b) The Contractor must exercise due care so as to prevent spilling, scattering or dropping of refuse through collector activity and shall immediately, at the time of occurrence, clean up such spillage, dropping or scattering.

XIV. COMPLAINTS

Each work day, the Contractor will contact the City to receive complaints received that day on his operations. Upon receipt of the complaints, the Contractor shall investigate and clear the complaint with the complainant and notify the City of the action taken on the next scheduled work day. The Contractor is to render service on Saturday for those missed collections on Friday, if the missed collection is reported to him Friday, and the collection is not made on Friday. In reporting the action of the processed complaints, such irregularities as late set-outs or violations should be noted to distinguish between valid and invalid acquisitions.

Should the Contractor not render collection Service within forty-eight (48) hours after a missed collection complaint is reported to him, or his authorized representative, the Director may make whatever arrangements are necessary, in his opinion, to provide the collection service.

For all such costs, charges and damages incurred by the City, together with the costs of completing the work, the Contractor and his surety shall be liable and all such costs may be deducted from any monies due or which may become due the Contractor.

The City, aided by the Contractor, will identify and contact customers who are constant complainants, to alleviate the condition causing the complaint.

XV. EMPLOYEES

a) The Contractor will agree to use his best efforts to prohibit any drinking of alcoholic beverages by its drivers and crew members while on duty or in the course of performing their duties under this contract.

b) The Contractor shall furnish his employees with uniforms which shall always be as neat and clean as circumstances permit.

c) The Contractor shall give preference in employment to qualified residents of the City on all work to be performed on the contract.

d) Employees shall not trespass or loiter, cross property to adjoining premises, or meddle or tamper with property which does not or should not concern them.

XVI. DISPOSAL SITES

Collected garbage and refuse shall be transported by the Contractor to approved disposal sites operated by the City or privately under City permit, or at other lawful disposal installations. Loads into said disposal sites will be accounted for by measuring or weighing.

The Contractor shall pay all disposal fees, charges or costs. The Contractor will be totally responsible for his own collection and supervisory equipment while operated on any disposal site whether owned by the City or by others.

City or other governmentally operated sites are available at published rates at the following present locations:

a) 1815 North Manchester, Milwaukee Site, Kansas City, Mo.

b) 7th Street Trafficway and Boswell, M.A.R.C. Site, Kansas City, Kansas

c) 34th and Shrank, City of Independence, Independence, Mo.

Other sites are available at published rates at the following present locations:

a) 83rd and Indiana, Southeast Landfill, Kansas City, Missouri

b) ½ mile north of I-70, on R. D. Mize Road, Casey

Landfill, Blue Springs, Missouri

c) 4½ miles west of Parkville on State Route FF and Waldron Road, Platco Landfill, Parkville, Missouri

d) ½ mile north of Missouri City on Stillhouse Road, Landfill, Inc, Missouri City, Missouri

It is anticipated that the Milwaukee site will be closed approximately by the end of June, 1973. Should the Southeast site continue to be available, which is subject to the approval of the City Board of Zoning Adjustment, the City has a contractual arrangement whereby City Refuse Contractors will be allowed to deposit city residential refuse at the rate of two dollars twenty-five ($2.25) per ton commencing October 16, 1973. Unexpected modifications because of state or federal requirements could cause contracted Landfill rate to increase.

Should the Contractor be required to haul longer distances during the term of this contract because of availability of landfill sites noted above, the City will reimburse the Contractor for such longer hauls on the basis of $0.25 per ton-mile, computed from the centroid of the origin-destination zone (as designated by the Missouri State Highway Department) to the nearest approved sanitary landfill, less the distance from the origin-destination zone to the closed facility.

The City of Kansas City, Missouri has no control of the operations of other governmental landfills, and therefore, cannot comment on their operation.

XVII. COLLECTION TRUCKS

The Contractor agrees to use well-maintained, enclosed, leak-proof, packer-type truck bodies for all regularly scheduled combined residential refuse collection.

Should the Contractor be unable to do so, the Director may, after a period of five (5) days, Sunday excluded, take over the prosecution of the work, enter into agreements with others for the work, or to use such other methods as in his opinion may be required for prosecution of the work in an acceptable manner.

For all cost, charges and damages incurred by the City, together with the costs of completing the work, the Contractor and his surety shall be liable and all such costs may be deducted from any monies due or which may become due the Contractor.

a) The Contractor shall provide and maintain during entire period of this contract a fleet of packer collection vehicles sufficient in number and capacity to efficiently perform the work and render the services required of him by this contract. He shall provide evidence of his ability to furnish vehicles and personnel under breakdown and lay-off conditions.

b) Each truck so used shall be prominently identified on each side with City furnished decals with the CITY OF KANSAS CITY, MISSOURI - CONTRACT REFUSE HAULER NO. _________. The Contractor will install decals at his cost.

c) Each collection vehicle shall be kept in a sanitary condition at all times and to insure compliance herewith, the City reserves the right to inspect the Contractor's collection vehicles at any time to ascertain said sanitary condition.

d) The Contractor shall keep his trucks well painted and washed. Vehicles shall be completely washed at least once a week.

e) Each truck at all times shall be equipped with a shovel and a broom or rake, intended for the collection of spilled refuse.

XVIII PENALTIES

The Director will notify the Contractor of each complaint reported to the City. It shall be the duty of the Contractor to take whatever steps necessary to remedy the complaint.

Failure to remedy the complaint within twenty-four (24) hours after reported to the Contractor by the City, will result in a penalty against the Contractor. It is hereby agreed that the City may deduct from any monies due or which may become due the Contractor, the penalty according to the following amounts:

(1) Failure to clean up spilled refuse (Section XIII, sub-paragraph b), COLLECTIONS SPECIFICATIONS). - - - - - - $3.00 each occurrence

(2) Failure or neglect to clear complaints on the next-shceduled working day as required by Section XIV, first paragraph, COLLECTIONS SPECIFICATIONS. - - - - - - - - - - - - - - - - - $5.00

XIX BAG DISTRIBUTION

An alternate proposal for bag distribution may be submitted by the Contractor. The work envisioned in this alternate proposal is described herein.

a) Bags will be distributed in packages similar to those currently used.

b) Distribution will be made to each building containing less than seven family dwelling units served within the residential collection zone under contract.

c) Bag deliveries will be made 4 times at a 3 month interval beginning with the first delivery during May, 1973, for the area south of 63rd Street and north of the Missouri River; June, 1973, for the area between the Missouri River and 43rd Street; and, July, 1973, for the area between 43rd street and 63rd street.

d) Each package will weigh approximately five (5) pounds.

e) Delivery point will be similar to that of the local daily newspaper, that is, in the front yard or driveway near the front door.

f) Bags will be checked out to the contractor from the warehouse located at 1815 North Manchester, Kansas City, Missouri.

g) The Contractor will be accountable for the bags checked out to him, and shall maintain a record of the areas and dates where bags delivered.

No bidder in this proposed contract will be awarded an alternate contract for bag distribution unless he is awarded the base contract for residential refuse collection in that particular residential collection zone.

XX WHITE GOODS

An alternate proposal for the collection of white goods may be submitted by the Contractor. The basis of payment for this service will be the unit bid price per month times the total number of dwelling units within the zone. The work envisioned in this alternate proposal is described herein:

a) The collection of the white goods items is to be made on the regular day of refuse collection.

b) The householder is required to place the discarded white goods items at the curb line or roadside for collection.

c) White goods items eligible for collection include, but not limited to, items such as: discarded furniture; bed springs and mattresses; rugs and rug pads; large appliances; lawn furniture; large discarded toys; swing sets; hot water tanks; Bar B Que grills; sinks; bathroom furniture, air conditioners; and televisions.

c) In the event of a question as to the eligibility for collection of a discarded item, the Director will make a determination and his decision shall be binding on the part of the Contractor.

DEPARTMENT OF PUBLIC WORKS

KANSAS CITY, MISSOURI

CONTRACT DOCUMENT NO. ____________

AGREEMENT BETWEEN CITY AND CONTRACTOR

THIS CONTRACT, made and entered into this ___day of ______, 19__, by and between

as principal, and party of the first part, and

as surety, party of the second part, and KANSAS CITY, MISSOURI, through its Director of Public Works, party of the third part.

WITNESSETH: That whereas the said party of the first part is the lowest and best bidder for providing the dollowing service to the City, to-wit:

To furnish all labor, equipment, materials, tools, Insurance supervision and all other items incidental thereto and to perform all work necessary and as specified in the prescribed manner and time, to provide the service of refuse collecting and bag distribution within residential collection zone(s) as follows:

____

____

NOW, THEREFORE, the said party of the first part, for and in consideration of the compensation provided to be paid in the manner set forth in the Contract Documents and Proposal hereto attached, hereby agrees and binds himself, his heirs, executors, administrators, or itself, its successors and assigns, as follows:

To furnish all labor, materials and equipment and do all the work necessary to complete the said service according to the Contract Documents and Specifications therefore perfected and adopted by the Director of Public Works on the ________ DAY OF _________________, 19____, and being Documents identified as the "Notice to Bidders", "General Provisions", "Collection Specifications", "Proposal", "Performance Bond", "insurances", "Addenda", "Notice to Proceed", "Map", and "Change Orders" are made a part hereof.

The party of the first part hereby agrees and guarantees that the work herein mentioned shall be completed without further compensation than that provided for in the specifications; the acceptance of the work hereunder and payment therefor shall not be held to prevent the maintenance of an action on the Contractor's Bond for failure to perform said work in accordance with the Contract.

The said party of the first part agrees further to begin work not later than the date specified in the "Notice to Proceed", and to complete the work as specified.

The said party of the second part, the Surety, hereby stipulates and agrees that no change, alterations or additions to the terms of the contract or to the work to be performed thereunder, or the specifications accompanying the same, shall in any wise affect their obligations on this contract and bond, and do hereby waive notice to any such change, alterations or additions to the terms of the contract or to the work or the specifications.

GUARANTEE: The party of the second part hereby guarantees that the said party of the first part will well and truly perform the covenants hereinbefore contained and will pay for the work and labor for all laborers, sub-contractors, and truck drivers employed, and owners of equipment used on the work, and for all materials used therein, and if the cost of such work and labor, use of equipment and materials is not paid in full by the said party of the first part, then the said party of the second part hereby agrees to pay for said work and labor, use of equipment, and materials, or any part thereof which shall not be paid by said first party, within ten (10) days after the money for said work and labor, use of equipment and materials, becomes due and payable, and this provision shall entitle any and all laborers, truck drivers, and owners of trucks who may do work, and parties who may furnish equipment used and materials for the service to be performed under this contract, to sue and recover from said second party the amount due or unpaid to them or either of them, by said first party. The said party of the second part hereby agrees with Kansas City that the said party of the first part will well and faithfully perform each and all the terms and agreements in the foregoing contract, to be done, kept and performed on the part of the first party, but said party shall not be liable on this guarantee on account of the materials and equipment used and labor done upon said work beyond the sum of

____

____ Dollars ($__________)

This contract is entered into subject to the approval or rejection of the City Council and shall not be binding until so approved and is subject to the Federal and State Laws, and the provisions of the City Charter and Ordinances in general, that may affect same.

IN WITNESS WHEREOF, the said parties of the first and second part hereunto set their hands and seals respectively, and Kansas City executes this contract by and through its Director of Public Works.

(EXECUTED IN QUINTUPLICATE)

Attest: ______________________ ______________________(SEAL)
First Party

______________________ ______________________(SEAL)
Director of Public Works
of Kansas City, Missouri
Second Party

OFFICE OF THE CITY COUNSELOR

The foregoing Contract and Bond have been approved as to form and legality.

Kansas City, Missouri ________ ______________________
(Date) City Counselor

OFFICE OF THE DIRECTOR OF FINANCE

The Surety and Bond aforesaid are hereby approved as sufficient, and I hereby certify that there is a balance otherwise unencumbered to the credit of the appropriation to which the above services are to be charged sufficient to meet the obligations hereby incurred, and a cash balance otherwise unencumbered in the treasury to the credit of the fund from which payment for such services is to be made equal to one-twelfth of the established cost of the furnishing all the service required by this contract.

Kansas City, Mo. ________ ______________________
(Date) Director of Finance

OFFICE OF THE CITY CLERK

(Complete if Contract requires approval by City Council)

The foregoing Contract and Bond have this day been ratified, approved and confirmed by the Council of Kansas City, Missouri by Ordinance No. ______________ .

Kansas City, Mo. ________
(Date)

ATTEST:______________________ By ______________________
City Clerk

CONTRACT DOCUMENT NO. ____________________ DATED ____________, 19____

PERFORMANCE BOND

For the faithful performance of each and all of the terms and stipulations of this contract, in every particular,

____

____

as principal, party of the first part, and

____

licensed to do business in Missouri, as surety, party of the second part, hereby bind themselves and their respective heirs, executors, administrators, successors, and assigns, unto said Kansas City, Missouri, a Municipal corporation, in the penal sum of

____ Dollars

($______________________) lawful money of the United States.

This bond shall remain in full force and effect, until the said

____

____

party of the first part, shall have faithfully and properly performed the foregoing contract, according to all the terms thereof. It shall remain in full force and effect until the party of the first part shall have paid to the proper parties all amounts due for labor performed, for equipment, materials and services furnished and consumed, for sales taxes, and for all insurance and royalties in connection with, or incidental to, the completion of the contract, and while this bond is in full force and effect, it may be sued on at the instance of any interested party (as above mentioned), in the name of Kansas City, Missouri, to the use of such interested party, for the breach of any of the conditions of the contract.

The obligation of this bond shall become void only when all the conditions of the contract, as above stated, have been fully discharged.

WAIVER. The said surety, for value received, hereby expressly agrees that no change, alteration or addition to the terms of the contract or to the work to be performed thereunder, shall in any wise affect the obligations of this bond, and it does hereby waive notice of any such change, or alteration or addition to the terms of the contract, or to the work to be performed thereunder.

IN TESTIMONY WHEREOF, we have hereunto set our hands and seal this ________ day of ________________, 19____.

(This bond executed in quintuplicate)

ATTEST:__________________________ Secretary

__________________________(SEAL) Principal

__________________________ By

__________________________(SEAL) Surety

The foregoing bond approved this ______ day of ____________________, 19____.

____
Director of Public Works
of Kansas City, Missouri

OFFICE OF THE CITY COUNSELOR

The foregoing Bond is in due form, according to law, and is hereby approved

Kansas City, Missouri ____________19_____ __________________________ City Counselor

OFFICE OF THE DIRECTOR OF FINANCE

The foregoing bond is hereby approved this __________day of________________

__________, 19_____.

____
Director of Finance

APPENDIX H

Private Contractor Bid Data for 1971, 1972, and 1973 City Contracts

BIDDERS NAME REFUSE ROUTES MARCH 16, 1973	Wayne Willey Base	Alt #1	Alt #2	Alt #3	Alt #4	Alt #5	Eiken Disp.	J. D. Taylor	Wm. Nelson	James Siggs	Alt #1	A. J. Rivera	CARVCO	Compaction Hauling Co.	T&A Disposal	Deffenbaugh Disp. Service	Alt #1
1 @ 3617							2.50								1.89	1.95	1.83
2 @ 2351										1.60	1.53		1.75			1.75	1.63
3 @ 2546										1.60	1.53		1.75			1.73	1.61
4 @ 3123										1.55	1.48		1.75		1.53	1.68	1.56
5 @ 3123										1.55	1.48		1.75		1.53	1.65	1.53
6 @ 2306												2.04				2.08	1.96
9 @ 2886	1.41	1.39		1.39		1.39							1.38			1.83	
10 @ 2579	1.41	1.39		1.39		1.39		1.40					1.38		1.53	1.75	
11 @ 2896	1.41	1.39		1.39		1.39							1.38			1.69	
12 @ 2840	1.41	1.39		1.39		1.39							1.38	1.40	1.49	1.73	
13 @ 2440	1.41	1.39		1.39		1.39			1:43				1.38		1.49	1.73	
14 @ 2934	1.51		1.50	1.49		1.49							1.38			1.73	
15 @ 2534	1.51		1.50	1.49		1.49							1.38			1.78	
16 @ 2542	1.41	1.39		1.39		1.39							1.38		1.57	1.69	
17 @ 2577	1.51		1.50	1.49		1.49							1.38		1.57	1.74	
18 @ 2786	1.51		1.50	1.49		1.49							1.38		1.57	1.73	
19 @ 2641	1.51		1.50	1.49		1.49							1.38			1.86	
20 @ 2043	1.51		1.50	1.49		1.49							1.38			2.16	
21 @ 1420	1.89				1.88	1.87			2.01				1.75			2.28	
22 @ 2529	1.69				1.68	1.67							1.38			1.70	
23 @ 2497	1.69				1.68	1.67							1.38			1.72	
24 @ 2619	1.69				1.68	1.67							1.38			1.75	
BAG DELIVERY	9-19 .04	20-24 .06					.10	.03	21=.07 13=.04		.03	.06	.05	.03	.03½		
WHITE GOODS	9-19 .05	20-24 .08						.14	21=.15 13=.12		.10	.07	.12	.16	.10		
TIE BID ZONES		*	*	*	*	*					*						
									CASHIERS CHECK								
BID BOND	BID BOND						CHECK	CASHIERS CHECK	$1,500	BID BOND		CASHIERS CHECK	BID BOND	CASHIERS CHECK	BID BOND	BID BOND	
	$24,000						$1,500	$1,500	BID BOND	$6,000		$1,500	$35,000	$1,500	$13,500	$44,000	
									$1,500								

[illegible]

☐ RECOMMENDED AWARD: Alfred H. Beck
ALFRED H. BECK
OPERATIONS ENGINEER

AWARDED: Myron D. Calkins
MYRON D. CALKINS
DIRECTOR OF PUBLIC WORKS

BIDDERS NAME REFUSE ROUTES MARCH 13, 1972	WAYNE WILLEY	ALT #1	ALT. #2	ALT. #3	ALT. #4	CLAY COUNTY HAULING	AL'S TRASH & CLEANING	ALT. #1	METRO WASTES SERVICE	ALT. #1	ALT. #2	ALT. #3	J.D. TAYLOR	COMPACTION HAULING
1 @ 3359														
2 @ 2269 x							1.94	1.92						
3 @ 2552 x						2.50								
4 @ 3118 x									1.83	1.82	1.83			
5 @ 3101 x									1.83	1.82	1.83			
6 @ 2233 x														
9 @ 2563	1.75	1.66	1.65						1.96					
10 @ 2776	1.69	1.60	1.59						1.70	1.64		1.64	1.63	
11 @ 3296 x	1.69	1.60	1.59	1.61					1.70	1.64		1.64		1.57
12 @ 2363 x	1.69	1.60	1.59						1.70	1.64		1.64		1.48
13 @ 2455 x	1.69		1.59						1.70	1.64		1.64		
14 @ 2069	1.82	1.73	1.72											
15 @ 2375	1.82	1.73	1.72	1.74										
16 @ 2541 X	1.69	1.60	1.59	1.61					1.70	1.64		1.64		1.53
17 @ 2367	1.82	1.73	1.72						1.78	1.72		1.72	1.71	
18 @ 2047 X	1.77	1.68	1.67	1.69	1.70				1.74					
19 @ 3460	1.77	1.68	1.67	1.69	1.70									
20 @ 2311	1.87	1.78	1.77	1.79	1.80									
21 @ 1322	2.50		2.40				2.39	2.37						
BAG DELIVERY	0.04					NB	0.0[illegible]	← #2	0.0333				NB	0.03
*TIE BID ZONES		*	*	*	*		.095	← #21		*	*	*		
BID BOND	BID BOND					CERT. CHECK	[illegible]		BID BOND				CASHIER'S CHECK	CASHIER'S CHECK
AMOUNT	$24,000					$2,000	$4,000		$24,000				$4,000	$6,000

BIDDERS NAME REFUSE ROUTES MARCH 13, 1972	A.J. RIVERA	ALT. #1	C.J. MOFFITT	BROOKS DISPOSAL	ALT. #1	JAMES BIGGS	ALT #1	ALT #2	DEFFENBAUGH DIS. SERVICE	ALT. #1	ALT. #2	ALT. #3	CARVCO	WM NELSON		
1 @ 3359									2.10	1.89	1.92					
2 @ 2269 x	2.23	2.20			1.84	1.80	1.60		2.10	1.89	1.92					
3 @ 2552 x					1.94	1.80	1.60		2.10	1.89	1.92					
4 @ 3118 x			2.00	1.84	1.84	1.75		1.55	2.10	1.89	1.92					
5 @ 3101 x						1.75		1.55	2.10	1.89	1.92					
6 @ 2233 x	2.13	2.10							2.25	1.89	2.15					
9 @ 2563									1.75	1.64		1.68	1.47	1.71		
10 @ 2776									1.75	1.64		1.68	1.67	1.68		
11 @ 3296 x									1.75	1.64		1.68	1.67	1.50		
12 @ 2363 x									1.69				1.67	1.69		
13 @ 2455 x									1.75				1.67	1.50		
14 @ 2069									1.75				1.47			
15 @ 2375									1.75	1.64		1.68	1.47	1.70		
16 @ 2541 X									1.75	1.64		1.68	1.67			
17 @ 2367									1.85				1.47			
18 @ 2047 X									1.75				1.67	1.47		
19 @ 3460									1.75				1.47			
20 @ 2311									1.85				1.47			
21 @ 1322									2.70	2.35		2.59	2.75	2.30		
BAG DELIVERY	0.04		NB	NB		0.13			0.08				0.05	0.0[illegible] ← ALL OTHERS 0.033 ← #21		
*TIE BID ZONES		*			2 OR 3 OR 4		*	*		*	*	*				
BID BOND	CASHIER'S CHECK		BANK CHECK	CASHIER'S CHECK		BANK MONEY ORDER			BID BOND				BID BOND	BID BOND		
AMOUNT	$4,000		$2,000	$2,000		$8,000			$40,000				$24,000	$16,000		

* TIE BID - ALL OR NONE

X- BAG DELIVERY BY CONTR

☐ RECOMMEND AWARD Alfred H. Eck

AWARDED: Myron D. Calkins
MYRON D. CALKINS
DIRECTOR OF PUBLIC WORKS

PUBLIC WORKS DEPARTMENT

Reproduced from best available copy.

BIDDERS NAME REFUSE ROUTES JAN. 29, 1971	T. LEWIS SONS	EDWARDS TRASH SER.	DEFFENBAUGH DISPOSAL	TIED BID	A & C HAULING	P & G CLEAN-UP	TOM'S DISPOSAL
1 @ 2,500			2.25	2.17			
5 @ 3,000	1.85	2.25	2.25	2.17	1.83	2.60	1.90
6 @ 2,000			2.50	2.42			
BAG DELIVERY	0.233	N.B.	0.05	0.05	0.04	0.07	0.045
TIE BID ZONES			↑	1,5,6	↑		
				ALL OR NONE			

☐ Recommend Award

[illegible]

Award

MYRON D. CALKINS
DIRECTOR OF PUBLIC WORKS

BIDDERS NAME REFUSE ROUTES JAN. 19, 1971	W. WILLEY BASE	W. WILLEY ALT #1	W. WILLEY ALT #2	METRO	METRO ALT #1	NELSON	NUNNLEY	NORTH STAR	NORTH STAR ALT.	BIGGS	RIVERIA	MATTY	DEFFENBAUGH	DEFFENBAUGH ALT #1	SUNRISE	SHELTON & SON	SHELTON & SON ALT.	DAILY SAN. SER.	MODEL CITIES	MODEL CITIES ALT.
1 @ 2500								4.10	2.61											
2 @ 1680								4.10	2.61		2.48									
3 @ 2790								4.10	2.61	1.87										
4 @ 3000								4.10	2.61			2.25								
5 @ 3000								4.10	2.61											
10 @ 2650				1.78	1.71								1.96	1.80		2.50	2.45			
11 @ 2750	1.91	1.79		1.78	1.71								1.96	1.80		2.50	2.45	2.25		
12 @ 2300				1.78	1.71								1.96	1.80		2.50	2.45		2.33	2.31
13 @ 2550				1.78	1.71		1.50						1.96	1.80	2.30	2.50	2.45		2.33	2.31
14 @ 1700				1.90	1.83										2.65					
15 @ 2300	1.91	1.79		1.90	1.83								2.20			2.50	2.45			
16 @ 2320	1.91	1.79		1.78	1.71								1.96	1.80		2.50	2.45			
17 @ 2050				1.90	1.83								2.45							
18 @ 2500	1.89	1.77	1.79	1.90	1.83								2.20		2.65					
19 @ 2560	1.89	1.77	1.79	1.90	1.83								2.45							
20 @ 1250	1.99	1.87	1.89	2.25	2.18															
21 @ 800				3.25	3.18	2.75									6.00					
BAG DELIVERY	.03	.03	.03	.05	.05	.10	.05	NB	NB	.04	.08	NB	.05	.05	.16	.05		.02	.03	.03
TIE BID ZONES																				
		ALL OR NONE	ALL OR NONE		ALL OR NONE				ALL OR NONE					ALL OR NONE			ALL OR NONE			ALL OR NONE

Low Bids

APPENDIX I

Missed Collection Call Data

REFUSE DIVISION

Missed Collections - JUNE, 1973

Contractor or District	No. of Delg. Units	No. of Misses	No. of Misses per Thousand Collections JUNE	No. of Misses per Thousand Collections MAY	No. of Misses per Thousand Collections APRIL
50 (950)	16,701	47	0.6	0.7	0.7
60 (960)	16,627	59	0.8	0.8	1.1
40 (940)	16,723	98	1.4	1.8	1.1
30 (930)	16,405	102	1.4	1.6	1.5
TOTAL CITY	66,456	306	1.1	1.2	1.1
Rivera	2,458	10	0.9	1.6	0.3
Biggs	11,287	82	1.7	2.5	1.3
Willey	7,717	87	2.6	2.8	2.0
CARVCO	40,713	560	3.2	5.5	1.6
T & A	3,617	60	3.8	11.8	(New contract begun in May)
TOTAL CONTRACTORS	65,792	799	2.8	4.9	1.6
TOTAL CITY-WIDE	132,248	1,105	1.9	3.1	1.0

JMM/fm
6/6/73

APPENDIX J

Refuse Program Survey Response Summary

1-23-73
GHC

SUMMARY OF REFUSE PROGRAM SURVEY RESPONSES

The following tabulation is a summary of responses to selected questions by personnel of the Refuse Division to householders with listed telephone numbers in Kansas City, Missouri during calendar year 1971 and 1972. Efforts were made to insure that the respondents were selected in a random manner from the population by geographic zone and in a uniform proportion to the total universe of customers served. In the April 1971 survey, some householders were called that were not customers therefore their answers were not recorded. In the July and December 1971 and 1972 surveys' only customers with telephones were called (surveyed).

Persons called in each survey were as follows, April 250; July 261; December 1971, 325; and December 1972, 368. The April survey had 11 questions and the July and December survey had 14 basic questions each.

TABULATION

Question: How many members in your family?

Number	April	July '71	December '71	December '72
1	8.8	17.2	16.5	13.3
2	38.0	31.3	32.6	37.5
3	21.6	14.9	18.3	18.0
4	12.8	15.7	17.1	15.2
5	10.0	9.6	8.1	16.0 } >5
6	8.8	6.9	4.3	
>7		5.4	3.7	

Question: Where do you prefer to place your trash?

	July '71	December '71	December '72
Curb or Roadway	37.7	63.4	70.1
Backyard	13.6	9.9	10.0
Front of House	18.5	8.1	7.3
Side of House	13.2	14.6	5.7
Other	17.0	4.0	6.8

Question: Where do you place your trash for collection?

	July '71	December '71	December '72
Curb or Roadway	67.7	81.9	86.7
Backyard	1.1	1.2	.5
Front of House	18.3	6.8	5.4
Side of House	6.2	8.0	2.7
Other	5.7	2.1	4.6

Question: Do you object to placing trash at curb?

	July '71	December '71	December '72
Yes	25.4	25.6	23.1
No	74.6	74.4	76.9

Question: Do you prefer using bags?

	April	July '71	December '71	*December '72
Yes	96.7	90.2	93.0	87.0
No	3.3	9.8	7.0	13.0

Question: Are you getting enough bags?

	July '71	December '71	December '72
Yes	55.4	75.8	67.8
No	44.6	34.2	32.2

Question: How many bags do you use weekly?

Number	April		July '71		December '71		December '72	
		Accl.		Acc'.		Acc'		Accl.
1	8.3		6.5		5.0		7.6	
2	27.7	36.0	21.2	27.7	26.4	31.4	40.1	47.7
3	28.9	64.9	49.4	68.1	34.8	66.2	32.7	80.4
4	17.8	82.7	14.9	83.0	23.0	89.2	12.3	92.7
5	9.9	92.6	10.7	93.7	6.8	96.0	>5 - 7.4	100.1
6	3.7	96.3	4.7	98.4	1.2	97.2		
> 6	3.7	100.0	1.6	100.0	2.8	100.0		

Question: Is your service satisfactory?

	April	July '71	December '71	December '72
Yes	93.1	93.5	95.7	94.3
No	6.9	6.5	4.3	5.7

Question: Are you having problems with missed collection?

	July '71	December '71	December '72
Yes	10.7	8.0	3.5
No	89.3	92.0	96.5

Question: Are you having problems with trash being collected late?

	July '71	December '71	December '72
Yes	56.5	8.0	10.3
No	43.5	92.0	89.7

Question: Is the service

	July '71	December '71	December '72
Improving	20.7	31.4	14.9
Getting Worse	1.5	0.9	1.9
Remaining the same	77.8	67.7	83.2

*This question was changed to read "Do you find the bags satisfactory?"

APPENDIX K

Computation of Kansas City Waste Generation Projections

COMPUTATION OF REFUSE WASTE GENERATION PROJECTIONS

(1) RESIDENTIAL WASTE GENERATION

The following data for each origin and destination zone (OD zone) projected residential waste generation:

1. OD zone number: Assigned by MARC.
2. Population 1970 (POP1970): Figures from MARC based on 1970 census.
3. Population 1980 (POP1980): Prediction by MARC.
4. Population 2000 (POP2000): Prediction by MARC.
5. Waste per day, 1972 (WPC): Assumed to be 2.2 lb.

The procedure for computing the projected generation follows:

per MARC'

1. Estimate the intermediate population figure. This is done by assuming a straight-line increase or decrease in population between the given years, 1970, 1980, and 2000. The average increment in population is determined and multiplied by the year needed. For example, the 1985 population (POP1985) is:

$$POP1985 = POP1980 + 5/20(POP2000 - POP1980)$$

To illustrate, for OD zone 287, POP1970 = 211, POP1980 = 334, and POP2000 = 1967. POP1985 = 334 + 5/20(1967 -334) = 742.

2. Estimate the projected waste per capita per day. Waste per day is increased by 1% yearly. In 1985, it is 2.504 lb./day, compounded annually.

3. Convert the waste per capita per day figure in lbs. to waste per capita per year in tons. This is done by multiplying by 365 and dividing by 2000. In the example, 2.504 lb/day equals .457 tons/year.

4. Compute the projected waste generation. This calculation is the product of the population and waste per capita figures. Population for OD zone 287 was projected at 742 for 1985, and the waste per capita was calculated at .457 tons/year. Waste per year for OD zone 287 for 1985 is therefore projected to be 339 tons (742 * .457).

(2) COMMERCIAL WASTE GENERATION

The technique used for computing projected commercial waste generation is analogous to that for residential. The following input data are used:

1. OD zone number: Assigned by MARC.
2. Employment 1970 (EMP1970): Figures from MARC based

on 1970 census.

3. Employment 1980 (EMP1980): Prediction by MARC.
4. Employment 2000 (EMP2000): Prediction by MARC.
5. Waste per day, 1972 (WPE): An estimation based on figures from MARC giving the proportion of employment in several industrial categories and waste, per employee in each category. An aggregate waste per employee figure was calculated as a weighted average for the types of commercial activity present in 'Industrial Analysis Areas', and this figure was assigned to each OD zone in each area. See the next page for further information.

Ind. Analysis Area	Agr	Con	Min	Mfr	Transport	Wholesale	Retail	Fin	Svc	Govt	Unc	Total
Waste Gen. Factor/Emp	10	4.07	50	10	4.07	4.71	4.12	1.75	3.67	1.58	1.43	
URBAN MARKET												
1963, No. of Emp.	-	41	-	1064	622	679	387	250	634	157	225	4059
1990, No. of Emp.	-	62	-	1416	651	768	498	341	1414	347	545	6042
Difference	-	21	-	352	29	89	111	91	780	190	320	1983

NOTE: To assign this difference to 1973, whether the difference is an increase or a decrease, the following computation is made:

Construction: 21 ÷ 27 = 0.77 incremental (increase) per year
0.77 x 10 years = 7.7 incremental change for year 1973.
This amount is added on to the figure of the base year 1963.
In this case 41 + 8 (round off from 7.7) = 49 employees under the Standard Industrial Classification (SIC) "Contract Construction".

The annual waste generation developed in the Urban Market Analysis Area of "Contract Construction", is the product of:

49 employees x 4.07# x 260 days/year = 25.48 tons/year

NOTE: Each columnar difference would undergo the same development.

The procedure for determining the projected commercial waste generation is identical to that for residential waste generation. Employment is interpolated between given years, the waste per employee factor is increased by 1% annually, and the two are multiplied together to give the projection. Annual waste generation is based on 260 working days per year.

COMMERCIAL WASTE GENERATION PROJECTION
KANSAS CITY, MISSOURI
(tons)

O D ZONE	1973	1975	1980	1985	1990	1995	2000
287	192.	319.	661.	1335.	2075.	2888.	3778.
289	16.	17.	21.	32.	44.	57.	71.
294	233.	343.	638.	716.	801.	893.	992.
295	0.	0.	0.	260.	548.	863.	1210.
296	3699.	4279.	5828.	6133.	6454.	6791.	7146.
297	1344.	2243.	4649.	6327.	8164.	10172.	12364.
298	698.	1162.	2404.	3605.	4923.	6366.	7944.
299	1108.	1798.	3644.	5702.	7960.	10434.	13139.
300	254.	333.	545.	648.	759.	880.	1012.
305	204.	248.	363.	406.	450.	497.	548.
307	418.	541.	870.	1179.	1518.	1885.	2292.
308	260.	302.	434.	759.	1138.	1554.	2008.
312	2.	2.	2.	16.	32.	49.	68.
313	163.	166.	175.	198.	223.	250.	280.
315	15.	17.	20.	35.	50.	68.	87.
317	461.	774.	1613.	1954.	2326.	2731.	3171.
319	47.	67.	119.	399.	708.	1047.	1419.
320	833.	1341.	2700.	2913.	3141.	3385.	3645.
321	22.	23.	24.	38.	53.	69.	87.
322	307.	360.	501.	696.	910.	1143.	1398.
323	133.	212.	421.	521.	631.	750.	879.
324	47.	74.	145.	773.	1465.	2226.	3060.
335	126.	201.	401.	514.	637.	771.	917.
338	515.	664.	1063.	1244.	1442.	1656.	1868.
340	693.	707.	743.	781.	821.	863.	907.
341	593.	704.	1002	1150.	1311.	1486.	1675.
342	38.	40.	44.	50.	56.	63.	70.
343	280.	289.	313.	343.	375.	410.	447.
344	167.	177.	205.	221.	238.	256.	275.
345	27.	27.	28.	30.	31.	33.	35.
346	1580.	1587.	1603.	1638.	1672.	1705.	1737.
349	774.	798.	860.	916.	976.	1039.	1106.
352	393.	480.	712.	839.	978.	1128.	1291.
356	226.	306.	517.	602.	695.	795.	904.
357	734.	1079.	2003.	2614.	3282.	4011.	4805.
359	1035.	1677.	3394.	3930.	4512.	5143.	5826.
361	141.	205.	378.	829.	1326.	1872.	2469.
362	3210.	3279.	3458.	3515.	3569.	3619.	3665.
363	3465.	3536.	3721.	3792.	3862.	3929.	3992.
364	316.	322.	339.	343.	348.	352.	355.
365	1718.	1753.	1844.	1880.	1915.	1949.	1982.
366	579.	592.	622.	645.	662.	680.	697.
367	6367.	6517.	6908.	7268.	7647.	8046.	8466.
368	4968.	5319.	6249.	6806.	7404.	8044.	8731.
369	5935.	5673.	5770.	6075.	6396.	6734.	7090.
370	4534.	4627.	4868.	5124.	5393.	5677.	5975.
371	753.	779.	850.	1199.	1582.	2001.	2458.
372	8733.	8876.	9323.	9369.	9394.	9398.	9378.
373	1950.	1995.	2112.	2171.	2230.	2291.	2351.

O D ZONE	1973	1975	1980	1985	1990	1995	2000
374	589.	603.	639.	668.	699.	731.	765.
375	1883.	1926.	2038.	2108.	2180.	2253.	2329.
376	7468.	7618.	8007.	8106.	8195.	8272.	8336.
377	20351.	21050.	22886.	24557.	26340.	28240.	30266.
378	7118.	7237.	7543.	8406.	9336.	10340.	11422.
379	3645.	3773.	3965.	3993.	4014.	4027.	4031.
380	3116.	3563.	4753.	4872.	4992.	5112.	5230.
381	3232.	3861.	5539.	6014.	6524.	7070.	7654.
382	111.	114.	121.	130.	140.	150.	161.
383	410.	418.	440.	463.	488.	514.	542.
384	2755.	2805.	2948.	3217.	3506.	3817.	4149.
385	7067.	7210.	7580.	8088.	8627.	9201.	9811.
386	9536.	9727.	10224.	10864.	11543.	12263.	13026.
387	10088.	10349.	11032.	11832.	12626.	13595.	14565.
388	4383.	4732.	5657.	6176.	6732.	7330.	7971.
389	17135.	17671.	19075.	20552.	22129.	23815.	25614.
390	1237.	1264.	1332.	1522.	1729.	1952.	2194.
391	690.	710.	762.	1053.	1372.	1721.	2101.
392	484.	496.	527.	679.	844.	1025.	1222.
393	7603.	8000.	9050.	10251.	11552.	12958.	14477.
394	433.	441.	464.	606.	762.	932.	1118.
395	320.	329.	352.	378.	407.	437.	469.
396	754.	770.	811.	826.	840.	854.	866.
397	2524.	2442.	2218.	2272.	2325.	2378.	2430.
398	643.	849.	1402.	1478.	1558.	1642.	1731.
399	160.	164.	175.	186.	198.	211.	224.
400	1635.	1670.	1759.	1856.	1957.	2064.	2177.
401	75.	78.	86.	96.	107.	119.	132.
402	277.	291.	329.	370.	414.	462.	513.
403	1387.	1418.	1492.	1748.	2019.	2313.	2632.
404	1017.	1041.	1101.	1166.	1234.	1307.	1384.
405	587.	598.	629.	664.	701.	740.	781.
406	418.	448.	530.	579.	632.	689.	750.
407	202.	207.	221.	238.	256.	276.	296.
408	116.	120.	131.	143.	156.	170.	185.
409	49.	50.	54.	58.	64.	69.	75.
410	618.	677.	835.	903.	976.	1054.	1137.
411	2826.	2900.	3091.	3258.	3433.	3618.	3813.
412	169.	214.	333.	358.	384.	411.	441.
413	192.	196.	206.	218.	230.	243.	257.
414	1379.	1407.	1479.	1534.	1590.	1649.	1709.
415	1320.	1348.	1419.	1463.	1507.	1551.	1596.
416	577.	589.	619.	654.	690.	728.	769.
417	83.	86.	95.	105.	116.	128.	141.
418	82.	87.	99.	108.	118.	128.	139.
419	88.	90.	96.	103.	111.	120.	128.
420	469.	603.	963.	1422.	1926.	2478.	3081.
437	1859.	1900.	2007.	2121.	2242.	2369.	2503.
438	279.	286.	306.	328.	352.	376.	403.

O D ZONE	1973	1975	1980	1985	1990	1995	2000
439	319.	326.	345.	365.	387.	409.	434.
440	1806.	1998.	2509.	2697.	2892.	3112.	3340.
441	1573.	1639.	1811.	1922.	2038.	2162.	2294.
442	2096.	2150.	2290.	2417.	2552.	2694.	2845.
443	1466.	1496.	1572.	1825.	2100.	2398.	2721.
444	1339.	1366.	1438.	1514.	1594.	1679.	1768.
445	1152.	1177.	1240.	1307.	1379.	1454.	1533.
446	356.	368.	401.	437.	475.	516.	559.
447	239.	246.	266.	287.	310.	335.	361.
448	201.	206.	216.	228.	241.	255.	269.
449	552.	566.	605.	646.	690.	736.	785.
450	293.	305.	324.	345.	367.	390.	415.
451	74.	78.	88.	99.	111.	124.	138.
452	50.	51.	55.	60.	66.	72.	78.
453	261.	267.	284.	303.	323.	344.	367.
454	163.	167.	176.	187.	199.	212.	225.
455	53.	56.	62.	69.	78.	86.	96.
456	46.	47.	50.	55.	60.	65.	70.
457	588.	603.	642.	679.	718.	760.	804.
458	92.	94.	100.	107.	114.	122.	131.
459	133.	141.	162.	183.	206.	230.	257.
460	82.	88.	101.	116.	133.	151.	170.
461	49.	50.	52.	56.	60.	65.	69.
462	3255.	3390.	3747.	4087.	4453.	4844.	5264.
463	1925.	1982.	2132.	2505.	2911.	3352.	3829.
464	4671.	5029.	5979.	6206.	6441.	6684.	6934.
465	55.	57.	60.	339.	647.	986.	1357.
467	181.	216.	312.	330.	351.	372.	394.
471	89.	92.	101.	109.	118.	128.	138.
485	304.	311.	328.	348.	368.	390.	413.
486	50.	52.	58.	66.	73.	82.	91.
487	78.	83.	95.	108.	123.	139.	156.
488	5570.	5748.	6214.	6517.	6835.	7169.	7518.
489	548.	560.	591.	626.	662.	700.	740.
490	451.	466.	506.	548.	593.	641.	693.
491	1849.	1889.	1993.	2088.	2188.	2293.	2403.
492	3343.	3466.	3789.	4110.	4454.	4822.	5216.
493	317.	324.	340.	359.	379.	400.	422.
494	456.	467.	497.	530.	565.	602.	641.
495	99.	102.	109.	118.	127.	137.	148.
496	24.	25.	29.	33.	38.	44.	50.
497	153.	158.	171.	185.	199.	215.	231.
498	1892.	1932.	2036.	2134.	2236.	2344.	2456.
499	1059.	1081.	1138.	1199.	1264.	1332.	1403.
500	536.	548.	579.	612.	648.	685.	725.
501	1126.	1149.	1207.	1270.	1336.	1406.	1479.
502	905.	958.	1099.	1245.	1403.	1574.	1759.
503	253.	265.	299.	322.	346.	372.	400.
504	949.	1039.	1278.	1383.	1495.	1615.	1743.

O D ZONE	1973	1975	1980	1985	1990	1995	2000
505	642.	658.	699.	741.	785.	832.	881.
506	181.	187.	203.	217.	232.	248.	265.
507	311.	318.	339.	361.	384.	410.	436.
508	206.	212.	229.	248.	268.	290.	313.
509	495.	508.	540.	576.	614.	654.	696.
510	1510.	1541.	1619.	1705.	1796.	1892.	1992.
511	13938.	14612.	16392.	17796.	19300.	20911.	22636.
512	31.	32.	34.	146.	270.	406.	555.
513	71.	73.	76.	191.	317.	455.	607.
514	178.	183.	194.	207.	221.	236.	252.
515	212.	217.	231.	247.	264.	282.	301.
516	287.	299.	329.	361.	396.	433.	474.
517	73.	76.	83.	93.	105.	117.	130.
518	431.	465.	555.	792.	1051.	1335.	1645.
519	5142.	5247.	5520.	6082.	6688.	7340.	8040.
520	320.	327.	343.	637.	961.	1315.	1704.
521	601.	616.	655.	699.	746.	797.	850.
522	105.	116.	145.	264.	393.	535.	691.
523	12.	13.	14.	17.	21.	24.	28.
524	166.	163.	153.	173.	195.	218.	243.
525	276.	372.	629.	630.	630.	629.	625.
526	93.	96.	104.	113.	123.	134.	146.
527	1168.	1323.	1737.	1828.	1924.	2025.	2131.
528	139.	144.	158.	174.	191.	209.	229.
532	383.	397.	433.	470.	511.	553.	599.
534	86.	89.	96.	105.	114.	125.	136.
535	156.	188.	274.	305.	332.	373.	412.
536	131.	139.	159.	178.	199.	222.	246.
537	512.	575.	742.	1521.	2377.	3317.	4346.
539	195.	208.	243.	268.	295.	323.	354.
540	232.	245.	281.	309.	340.	373.	409.
542	52.	52.	53.	57.	61.	66.	71.
543	5.	5.	6.	7.	9.	11.	13.
545	50.	52.	56.	61.	66.	72.	78.
546	379.	387.	406.	428.	452.	476.	502.
555	9.	9.	10.	12.	14.	16.	18.
556	162.	169.	186.	205.	225.	248.	271.
557	19.	22.	32.	35.	39.	43.	47.
558	149.	152.	159.	169.	179.	190.	202.
559	159.	166.	184.	201.	218.	237.	258.
560	45.	74.	152.	174.	197.	223.	251.
561	1.	2.	3.	5.	7.	9.	12.
562	210.	216.	231.	395.	575.	773.	989.
563	297.	329.	416.	446.	478.	512.	549.
564	696.	703.	722.	764.	807.	853.	902.
565	220.	279.	436.	460.	485.	512.	540.
566	0.	0.	0.	2.	3.	5.	7.
572	40.	46.	62.	203.	359.	529.	717.
573	680.	698.	744.	933.	1135.	1364.	1609.

O D ZONE	1973	1975	1980	1985	1990	1995	2000
574	233.	248.	287.	333.	383.	437.	496.
575	172.	215.	332.	360.	391.	423.	458.
578	10.	10.	11.	13.	15.	18.	21.
579	0.	0.	0.	2.	3.	5.	7.
TOTAL	264651	279722	319602	353240	389473	428480	470469

RESIDENTIAL WASTE GENERATION PROJECTION
KANSAS CITY, MISSOURI

fours

O D ZONE	1973	1975	1980	1985	1990	1995	2000
287	101.	113.	145.	339.	553.	787.	1043.
289	213.	224.	254.	568.	913.	1292.	1707.
294	34.	41.	62.	100.	142.	188.	238.
295	62.	67.	80.	184.	298.	423.	561.
296	16.	17.	17.	18.	19.	20.	21.
297	236.	266.	346.	1007.	1734.	2533.	3409.
298	300.	395.	649.	1396.	2217.	3118.	4105.
299	1639.	2154.	3532.	5043.	6698.	8510.	10469.
300	1489.	1551.	1713.	2058.	2434.	2842.	3286.
305	1827.	1889.	2051.	2535.	3062.	3637.	4262.
307	1542.	1778.	2408.	2894.	3424.	4000.	4625.
308	1308.	1461.	1868.	2183.	2525.	2896.	3299.
312	10.	12.	16.	392.	807.	1262.	1763.
313	26.	28.	31.	663.	1360.	2126.	2966.
315	99.	151.	289.	548.	834.	1147.	1490.
317	147.	225.	437.	951.	1517.	2138.	2819.
319	1028.	1413.	2462.	3794.	5256.	6857.	8608.
320	943.	990.	1113.	1757.	2464.	3239.	4086.
321	103.	107.	118.	521.	965.	1452.	1987.
322	1062.	1142.	1356.	2090.	2896.	3778.	4743.
323	143.	215.	409.	735.	1094.	1486.	1917.
324	163.	210.	336.	2110.	4065.	6213.	8570.
335	431.	1157.	1761.	3012.	4385.	5891.	7539.
338	2571.	2685.	2985.	3264.	3564.	3886.	4231.
340	0.	0.	0.	0.	0.	0.	0.
341	1093.	1181.	1415.	1487.	1563.	1643.	1727.
342	306.	333.	404.	528.	663.	810.	971.
343	2349.	2434.	2658.	2921.	3203.	3507.	3833.
344	1366.	1453.	1684.	1884.	2099.	2331.	2582.
345	152.	213.	376.	598.	841.	1107.	1396.
346	0.	0.	0.	0.	0.	0.	0.
349	2066.	2320.	2998.	3292.	3608.	3947.	4312.
352	2533.	2639.	2917.	3140.	3379.	3633.	3904.
356	1727.	1788.	1947.	2144.	2355.	2582.	2827.
357	3502.	3659.	4072.	4525.	5014.	5541.	6109.
359	2296.	2349.	2487.	2672.	2870.	3081.	3305.
361	197.	202.	217.	327.	448.	580.	725.
362	0.	0.	0.	0.	0.	0.	0.
363	4.	4.	4.	4.	4.	5.	5.
364	0.	0.	0.	0.	0.	0.	0.
365	32.	33.	35.	37.	38.	40.	42.
366	1142.	1165.	1224.	1287.	1352.	1421.	1494.
367	551.	562.	590.	621.	652.	685.	720.
368	170.	173.	182.	191.	201.	211.	222.
369	1210.	1235.	1298.	1331.	1365.	1399.	1432.
370	1960.	1999.	2101.	2155.	2208.	2261.	2314.
371	887.	905.	951.	976.	1001.	1025.	1050.
372	897.	860.	761.	800.	840.	883.	928.
373	964.	915.	782.	668.	540.	397.	238.

O D ZONE	1973	1975	1980	1985	1990	1995	2000
374	996.	948.	816.	786.	751.	709.	662.
375	445.	394.	257.	271.	284.	299.	314.
376	82.	83.	87.	69.	48.	25.	0.
377	214.	218.	230.	218.	206.	191.	174.
378	453.	491.	592.	725.	871.	1030.	1202.
379	36.	37.	39.	34.	28.	21.	14.
380	133.	136.	143.	112.	79.	41.	0.
381	1544.	1460.	1233.	1056.	859.	638.	393.
382	944.	868.	664.	583.	491.	389.	275.
383	1244.	1145.	876.	827.	772.	708.	636.
384	0.	0.	0.	0.	0.	1.	1.
385	78.	80.	84.	88.	93.	97.	102.
386	18.	18.	19.	20.	21.	22.	23.
387	123.	146.	208.	219.	230.	242.	254.
388	99.	142.	258.	271.	285.	300.	315.
389	30.	31.	33.	34.	36.	38.	40.
390	19.	20.	21.	22.	23.	24.	25.
391	369.	376.	396.	416.	437.	459.	483.
392	298.	304.	320.	336.	353.	371.	390.
393	182.	186.	196.	206.	216.	227.	239.
394	0.	0.	0.	0.	0.	0.	0.
395	1998.	2010.	2038.	2142.	2251.	2366.	2486.
396	555.	511.	394.	337.	274.	203.	124.
397	1595.	1875.	2623.	3122.	3666.	4256.	4898.
398	1649.	1581.	1396.	1297.	1185.	1057.	914.
399	1702.	1656.	1531.	1609.	1691.	1778.	1868.
400	2443.	2303.	1923.	1864.	1794.	1712.	1617.
401	1670.	1616.	1669.	1755.	1844.	1938.	2037.
402	1616.	1516.	1243.	1130.	1003.	860.	700.
403	1666.	1442.	839.	816.	789.	756.	719.
404	1845.	1803.	1686.	1665.	1637.	1602.	1559.
405	1488.	1475.	1436.	1385.	1325.	1255.	1174.
406	1539.	1455.	1229.	1269.	1310.	1351.	1394.
407	756.	771.	810.	799.	784.	765.	742.
408	1993.	2012.	2061.	2073.	2081.	2084.	2082.
409	884.	857.	784.	795.	805.	814.	821.
410	129.	132.	139.	109.	77.	40.	0.
411	781.	867.	1099.	1123.	1146.	1169.	1192.
412	1093.	1083.	1056.	992.	912.	835.	740.
413	1114.	1034.	817.	768.	712.	648.	576.
414	668.	632.	536.	626.	724.	830.	945.
415	193.	182.	154.	222.	297.	378.	467.
416	1009.	933.	726.	671.	608.	537.	457.
417	1061.	982.	767.	701.	626.	542.	448.
418	1186.	1095.	846.	859.	870.	881.	890.
419	1101.	1015.	784.	753.	716.	674.	625.
420	613.	625.	657.	690.	726.	763.	802.
437	1407.	1367.	1255.	1215.	1162.	1113.	1049.
438	1573.	1629.	1778.	1778.	1774.	1765.	1750.

O D ZONE	1973	1975	1980	1985	1990	1995	2000
439	1607.	1664.	1812.	1845.	1876.	1906.	1935.
440	602.	508.	256.	204.	146.	82.	10.
441	1426.	1352.	1151.	1210.	1272.	1337.	1405.
442	632.	597.	582.	612.	643.	676.	710.
443	836.	762.	561.	525.	483.	436.	382.
444	1398.	1330.	1143.	1201.	1263.	1327.	1395.
445	1445.	1372.	1173.	1232.	1295.	1361.	1431.
446	1014.	961.	815.	857.	900.	946.	995.
447	1142.	1079.	910.	956.	1005.	1056.	1110.
448	987.	958.	876.	858.	837.	811.	780.
449	1303.	1379.	1579.	1703.	1835.	1976.	2126.
450	1456.	1342.	1031.	947.	851.	743.	622.
451	1576.	1471.	1186.	1247.	1311.	1377.	1448.
452	1305.	1164.	785.	776.	763.	747.	727.
453	1688.	1597.	1349.	1418.	1490.	1566.	1646.
454	1406.	1297.	1002.	985.	963.	936.	904.
455	1277.	1174.	896.	876.	852.	824.	790.
456	1383.	1411.	1483.	1559.	1638.	1722.	1809.
457	3425.	3543.	3854.	3971.	4089.	4209.	4331.
458	2247.	2156.	1911.	2008.	2111.	2218.	2331.
459	1961.	2072.	2367.	2488.	2615.	2748.	2888.
460	1020.	931.	691.	726.	763.	802.	843.
461	492.	521.	597.	636.	678.	722.	769.
462	1616.	1688.	1878.	1926.	1974.	2021.	2068.
463	2039.	1978.	1813.	1855.	1897.	1939.	1979.
464	311.	317.	333.	472.	625.	792.	975.
465	554.	565.	593.	729.	876.	1037.	1212.
467	692.	706.	742.	780.	820.	862.	906.
471	740.	839.	1104.	1215.	1334.	1461.	1599.
485	990.	998.	1019.	1045.	1071.	1097.	1123.
486	1468.	1495.	1574.	1614.	1654.	1693.	1733.
487	1710.	1745.	1834.	1956.	2086.	2224.	2370.
488	1833.	1779.	1630.	1714.	1801.	1893.	1989.
489	1204.	1252.	1376.	1412.	1447.	1482.	1517.
490	1433.	1461.	1536.	1575.	1614.	1652.	1691.
491	2696.	2750.	2891.	3083.	3287.	3504.	3734.
492	945.	856.	617.	629.	640.	650.	660.
493	1565.	1564.	1558.	1559.	1556.	1548.	1535.
494	1831.	1811.	1754.	1826.	1901.	1979.	2059.
495	1189.	1203.	1239.	1234.	1227.	1215.	1198.
496	1901.	1905.	1912.	1976.	2042.	2110.	2179.
497	1739.	1832.	2078.	2321.	2583.	2866.	3172.
498	1311.	1347.	1441.	1538.	1640.	1749.	1865.
499	1544.	1575.	1655.	1766.	1884.	2009.	2142.
500	1535.	1566.	1646.	1757.	1876.	2002.	2136.
501	0.	0.	0.	0.	0.	0.	0.
502	1444.	1473.	1549.	1653.	1765.	1883.	2009.
503	1612.	1768.	2185.	2422.	2677.	2953.	3249.
504	1925.	1897.	1820.	1940.	2067.	2202.	2345.

O D ZONE	1973	1975	1980	1985	1990	1995	2000
505	2513.	2646.	2999.	3187.	3385.	3596.	3819.
506	1719.	1779.	1935.	2056.	2185.	2322.	2467.
507	2100.	2101.	2099.	2234.	2376.	2528.	2688.
508	1906.	1953.	2076.	2209.	2350.	2500.	2660.
509	627.	667.	775.	825.	878.	934.	994.
510	440.	476.	571.	608.	647.	689.	734.
511	1.	1.	1.	1.	1.	1.	1.
512	1242.	1276.	1363.	1449.	1541.	1639.	1742.
513	845.	1023.	1500.	1762.	2089.	2423.	2785.
514	1533.	1552.	1601.	1638.	1675.	1711.	1747.
515	2639.	2707.	2882.	3073.	3277.	3493.	3723.
516	2626.	2658.	2738.	2922.	3117.	3325.	3545.
517	1219.	1260.	1366.	1500.	1645.	1800.	1968.
518	577.	634.	784.	933.	1095.	1271.	1461.
519	1995.	2045.	2174.	2230.	2287.	2343.	2399.
520	742.	743.	929.	1117.	1322.	1545.	1788.
521	4.	4.	4.	5.	5.	5.	5.
522	374.	549.	1016.	1191.	1381.	1588.	1813.
523	40.	29.	0.	0.	0.	0.	0.
524	73.	109.	203.	296.	398.	510.	632.
525	2860.	3108.	3715.	3976.	4254.	4549.	4864.
526	924.	980.	1130.	1316.	1519.	1740.	1979.
527	0.	0.	0.	0.	0.	0.	0.
528	1604.	1650.	1773.	1943.	2126.	2323.	2534.
532	2013.	2100.	2329.	2631.	2959.	3312.	3694.
534	260.	278.	326.	467.	622.	792.	977.
535	382.	458.	478.	581.	693.	815.	947.
536	1755.	1879.	2209.	2439.	2687.	2954.	3242.
537	2863.	2968.	3246.	3840.	4486.	5188.	5950.
539	3076.	3166.	3399.	3694.	4010.	4349.	4712.
540	2066.	2153.	2382.	2814.	3283.	3793.	4346.
542	300.	359.	516.	754.	1014.	1299	1610.
543	148.	170.	229.	319.	418.	526.	644.
545	947.	1046.	1310.	1550.	1811.	2094.	2402.
546	339.	369.	442.	588.	741.	907.	1089.
555	566.	616.	748.	806.	868.	934.	1005.
556	1030.	1071.	1180.	1302.	1434.	1576.	1729.
557	1523.	1817.	2604.	2737.	2877.	3023.	3178.
558	7.	7.	8.	8.	9.	9.	10.
559	934.	1066.	1418.	1603.	1796.	2008.	2237.
560	347.	354.	372.	391.	411.	432.	454.
561	249.	305.	457.	567.	687.	818.	960.
562	2802.	2982.	3459.	3974.	4532.	5136.	5791.
563	1551.	1716.	2157.	2455.	2777.	3126.	3504.
564	258.	277.	328.	379.	434.	494.	559.
565	292.	318.	389.	514.	651.	800.	963.
566	151.	155.	167.	235.	311.	393.	463.
572	22.	34.	65.	91.	120.	151.	186.
573	1856.	1996.	2368.	2724.	3111.	3530.	3983.

```
  O D                                                                  PAGE    5
 ZONE      1973       1975       1980       1985       1990       1995      2000


  574      3722.      3798.      3995.      4195.      4413.      4639.     4875.
  575      1258.      1339.      1555.      1745.      1951.      2174.     2414.
  578        88.       100.       131.       186.       246.       312.      384.
  579       207.       318.       616.       921.      1256.      1623.     2024.


TOTAL     211136     216550     230514     258343     288436     320918    355968
```

TOTAL WASTE GENERATION PROJECTION
KANSAS CITY, MISSOURI

tons

O D ZONE	1973	1975	1980	1985	1990	1995	2000
287	292.	432.	806.	1674.	2628.	3675.	4822.
289	228.	241.	276.	600.	957.	1349.	1778.
294	267.	385.	700.	817.	944.	1081.	1231.
295	62.	67.	80.	444.	846.	1287.	1770.
296	3715.	4296.	5845.	6151.	6473.	6811.	7168.
297	1580.	2509.	4995.	7334.	9898.	12705.	15773.
298	998.	1557.	3053.	5001.	7140.	9484.	12049.
299	2747.	3953.	7176.	10745.	14659.	18944.	23629.
300	1742.	1834.	2259.	2706.	3193.	3723.	4298.
305	2030.	2136.	2416.	2941.	3512.	4134.	4811.
307	1959.	2319.	3278.	4073.	4941.	5888.	6917.
308	1568.	1763.	2283.	2942.	3663.	4450.	5307.
312	12.	14.	16.	408.	838.	1312.	1831.
313	189.	194.	206.	861.	1583.	2376.	3246.
315	114.	167.	309.	583.	884.	1215.	1577.
317	608.	1000.	2050.	2906.	3844.	4870.	5990.
319	1375.	1485.	2581.	4194.	5964.	7904.	10027.
320	1776.	2331.	3813.	4670.	5605.	6623.	7731.
321	125.	130.	142.	559.	1017.	1521.	2074.
322	1369.	1502.	1857.	2786.	3806.	4922.	6141.
323	276.	427.	830.	1256.	1724.	2236.	2796.
324	210.	284.	481.	2883.	5530.	8439.	11630.
335	1057.	1358.	2163.	3526.	5022.	6662.	8456.
338	3086.	3349.	4047.	4508.	5005.	5542.	6119.
340	693.	707.	743.	781.	821.	863.	907.
341	1686.	1885.	2417.	2638.	2875.	3129.	3402.
342	345.	373.	448.	578.	719.	873.	1042.
343	2629.	2723.	2971.	3263.	3578.	3916.	4280.
344	1533.	1631.	1890.	2105.	2337.	2587.	2857.
345	179.	240.	405.	628.	872.	1140.	1433.
346	1580.	1587.	1603.	1638.	1672.	1705.	1737.
349	2839.	3118.	3858.	4208.	4583.	4986.	5418.
352	2925.	3118.	3630.	3980.	4356.	4761.	5195.
356	1953.	2093.	2465.	2746.	3050.	3378.	3731.
357	4236.	4738.	6075.	7139.	8296.	9552.	10914.
359	3331.	4026.	5881.	6602.	7332.	8223.	9132.
361	338.	408.	594.	1156.	1774.	2451.	3194.
362	3210.	3279.	3458.	3515.	3569.	3614.	3665.
363	3469.	3540.	3725.	3797.	3866.	3933.	3997.
364	316.	322.	339.	343.	348.	352.	355.
365	1750.	1786.	1879.	1917.	1954.	1990.	2024.
366	1721.	1757.	1852.	1932.	2015.	2101.	2191.
367	6917.	7079.	7499.	7889.	8300.	8732.	9186.
368	5138.	5492.	6431.	6998.	7605.	8256.	8953.
369	7145.	7128.	7068.	7406.	7761.	8133.	8522.
370	6494.	6626.	6969.	7279	7602.	7938.	8290.
371	1640.	1685.	1801.	2175.	2583.	3026.	3508.
372	9600.	9736.	10084.	10168.	10235.	10282.	10306.
373	2914.	2910.	2894.	2839.	2770.	2685.	2589.

O D ZONE	1973	1975	1980	1985	1990	1995	2000
374	1585.	1551.	1456.	1455.	1450.	1441.	1427.
375	2328.	2320.	2295.	2378.	2464.	2552.	2643.
376	7550.	7701.	8094.	8175.	8244.	8298.	8336.
377	20565.	21269.	23115.	24776.	26545.	28431.	30440.
378	7571.	7728.	8135.	9131.	10207.	11370.	12624.
379	3731.	3807.	4004.	4027.	4042.	4048.	4045.
380	3249.	3690.	4875.	4985.	5071.	5153.	5230.
381	4776.	5321.	6771.	7070.	7362.	7708.	8047.
382	1055.	982.	736.	713.	631.	539.	436.
383	1654.	1563.	1315.	1290.	1259.	1222.	1178.
384	2750.	2806.	2949.	3218.	3507.	3817.	4150.
385	7146.	7290.	7664.	8176.	8720.	4298.	9913.
386	9554.	9746.	10243.	10884.	11564.	12285.	13050.
387	10211.	10496.	11240.	12051.	12916.	13837.	14619.
388	4482.	4874.	5915.	6447.	7018.	7630.	8286.
389	17165.	17702.	19100.	20586.	22165.	23852.	25654.
390	1257.	1284.	1353.	1544.	1752.	1977.	2220.
391	1059.	1086.	1152.	1469.	1809.	2180.	2584.
392	782.	800.	847.	1015.	1197.	1396.	1612.
393	7786.	8137.	9246.	10457.	11768.	13185.	14716.
394	433.	441.	464.	606.	762.	932.	1118.
395	2318.	2339.	2390.	2520.	2658.	2803.	2955.
396	1308.	1281.	1205.	1163.	1114.	1057.	991.
397	4119.	4317.	4841.	5394.	5991.	6634.	7328.
398	2292.	2431.	2798.	2775.	2742.	2699.	2645.
399	1661.	1820.	1706.	1796.	1890.	1989.	2093.
400	4077.	3972.	3683.	3720.	3751.	3776.	3794.
401	1945.	1895.	1756.	1851.	1951.	2057.	2169.
402	1893.	1807.	1572.	1500.	1417.	1322.	1213.
403	3053.	2860.	2337.	2564.	2807.	3069.	3350.
404	2862.	2843.	2787.	2831.	2872.	2909.	2943.
405	2075.	2073.	2065.	2044.	2026.	1995.	1455.
406	1957.	1904.	1759.	1848.	1942.	2040.	2143.
407	958.	978.	1031.	1036.	1040.	1040.	1039.
408	2109.	2132.	2192.	2216.	2236.	2254.	2267.
409	933.	907.	838.	857.	868.	882.	896.
410	747.	809.	974.	1012.	1053.	1094.	1137.
411	3607.	3767.	4190.	4321.	4580.	4788.	5005.
412	1262.	1297.	1390.	1350.	1302.	1246.	1181.
413	1306.	1230.	1023.	986.	942.	891.	832.
414	2047.	2039.	2014.	2159.	2314.	2479.	2655.
415	1513.	1530.	1574.	1685.	1803.	1929.	2063.
416	1587.	1522.	1346.	1325.	1298.	1265.	1226.
417	1144.	1063.	862.	806.	743.	670.	589.
418	1269.	1182.	946.	967.	988.	1009.	1029.
419	1189.	1135.	880.	856.	827.	793.	754.
420	1081.	1224.	1619.	2113.	2652.	3241.	3883.
437	3266.	3267.	3262.	3336.	3410.	3481.	3552.
438	1852.	1916.	2084.	2106.	2126.	2141.	2153.

O D ZONE	1973	1975	1980	1985	1990	1995	2000
439	1927.	1990.	2156.	2210.	2263.	2316.	2368.
440	2408.	2536.	2765.	2901.	3044.	3193.	3351.
441	2999.	2990.	2962.	3132.	3310.	3499.	3698.
442	2693.	2746.	2872.	3029.	3195.	3370.	3555.
443	2302.	2258.	2133.	2350.	2583.	2834.	3104.
444	2737.	2696.	2581.	2715.	2857.	3006.	3162.
445	2598.	2548.	2412.	2540.	2674.	2815.	2964.
446	1372.	1329.	1217.	1294.	1375.	1462.	1554.
447	1380.	1325.	1175.	1243.	1315.	1391.	1471.
448	1189.	1163.	1092.	1087.	1078.	1065.	1049.
449	1854.	1945.	2185.	2349.	2525.	2712.	2911.
450	1754.	1646.	1355.	1291.	1218.	1133.	1037.
451	1650.	1549.	1274.	1346.	1422.	1501.	1586.
452	1355.	1216.	840.	836.	829.	819.	806.
453	1949.	1864.	1633.	1721.	1813.	1910.	2013.
454	1569.	1463.	1178.	1172.	1162.	1148.	1130.
455	1330.	1229.	957.	946.	930.	910.	886.
456	1429.	1458.	1533.	1613.	1698.	1786.	1880.
457	4012.	4146.	4496.	4650.	4608.	4969.	5135.
458	2339.	2251.	2010.	2115.	2225.	2341.	2462.
459	2094.	2213.	2529.	2671.	2821.	2979.	3145.
460	1102.	1018.	792.	842.	896.	953.	1013.
461	541.	570.	649.	692.	738.	786.	838.
462	4871.	5072.	5625.	6013.	6426.	6865.	7333.
463	3964.	3961.	3945.	4361.	4808.	5290.	5809.
464	4981.	5346.	6312.	6679.	7066.	7476.	7909.
465	609.	621.	653.	1068.	1524.	2023.	2570.
467	873.	923.	1054.	1110.	1170.	1233.	1300.
471	829.	932.	1206.	1324.	1452.	1589.	1736.
485	1244.	1309.	1347.	1393.	1439.	1487.	1536.
486	1518.	1550.	1632.	1680.	1727.	1775.	1824.
487	1788.	1827.	1928.	2064.	2209.	2362.	2526.
488	7404.	7527.	7844.	8231.	8636.	9061.	9507.
489	1752.	1812.	1968.	2037.	2108.	2182.	2257.
490	1884.	1928.	2042.	2122.	2206.	2293.	2383.
491	4545.	4639.	4884.	5171.	5475.	5797.	6137.
492	4288.	4322.	4406.	4738.	5093.	5472.	5877.
493	1883.	1888.	1893.	1918.	1934.	1947.	1957.
494	2287.	2278.	2251.	2356.	2466.	2581.	2701.
495	1288.	1305.	1347.	1352.	1353.	1352.	1346.
496	1925.	1930.	1941.	2010.	2081.	2154.	2229.
497	1892.	1990.	2249.	2505.	2782.	3081.	3403.
498	3203.	3279.	3477.	3672.	3876.	4093.	4321.
499	2603.	2656.	2793.	2965.	3147.	3340.	3545.
500	2072.	2114.	2225.	2370.	2524.	2687.	2863.
501	1126.	1149.	1207.	1270.	1336.	1406.	1479.
502	2349.	2432.	2647.	2898.	3162.	3457.	3768.
503	1865.	2034.	2483.	2743.	3023.	3325.	3649.
504	2874.	2936.	3098.	3323.	3562.	3817.	4088.

O D ZONE	1973	1975	1980	1985	1990	1995	2000
505	3155.	3305.	3698.	3927.	4170.	4428.	4700.
506	1961.	1966.	2138.	2273.	2417.	2570.	2731.
507	2411.	2419.	2438.	2594.	2761.	2937.	3125.
508	2111.	2165.	2305.	2457.	2612.	2790.	2973.
509	1122.	1175.	1316.	1401.	1491.	1568.	1690.
510	1950.	2016.	2190.	2313.	2443.	2581.	2726.
511	13939.	14613.	16393.	17796.	19300.	20912.	22637.
512	1274.	1308.	1396.	1595.	1811.	2044.	2297.
513	916.	1096.	1576.	1973.	2406.	2878.	3392.
514	1711.	1735.	1795.	1846.	1896.	1948.	1999.
515	2852.	2924.	3113.	3320.	3541.	3775.	4024.
516	2913.	2955.	3067.	3283.	3513.	3758.	4219.
517	1292.	1335.	1448.	1593.	1750.	1917.	2098.
518	1008.	1099.	1340.	1725.	2146.	2606.	3107.
519	7137.	7292.	7694.	8313.	8975.	9683.	10440.
520	1062.	1120.	1272.	1754.	2283.	2861.	3491.
521	605.	620.	659.	704.	751.	802.	855.
522	479.	664.	1161.	1454.	1775.	2124.	2504.
523	52.	42.	14.	17.	21.	24.	28.
524	239.	271.	356.	469.	593.	727.	875.
525	3156.	3481.	4344.	4606.	4884.	5178.	5489.
526	1017.	1077.	1234.	1430.	1643.	1874.	2124.
527	1168.	1323.	1737.	1828.	1924.	2025.	2131.
528	1742.	1794.	1931.	2117.	2317.	2532.	2763.
532	2396.	2497.	2762.	3102.	3469.	3866.	4294.
534	346.	367.	422.	572.	731.	916.	1112.
535	538.	596.	752.	885.	1030.	1188.	1359.
536	1886.	2018.	2368.	2613.	2887.	3176.	3488.
537	3374.	3543.	3988.	5361.	6863.	8505.	10296.
539	3271.	3374.	3643.	3962.	4305.	4672.	5066.
540	2298.	2398.	2663.	3123.	3623.	4166.	4755.
542	352.	412.	570.	811.	1075.	1365.	1681.
543	153.	175.	235.	326.	427.	537.	657.
545	997.	1098.	1366.	1611.	1877.	2166.	2460.
546	718.	755.	855.	1016.	1192.	1363.	1591.
555	576.	625.	758.	818.	882.	950.	1023.
556	1192.	1240.	1366.	1507.	1660.	1824.	2000.
557	1541.	1840.	2636.	2772.	2915.	3066.	3224.
558	156.	159.	167.	177.	188.	200.	212.
559	1093.	1232.	1602.	1800.	2014.	2245.	2495.
560	391.	427.	523.	564.	608.	655.	705.
561	250.	307.	460.	572.	694.	827.	972.
562	3012.	3198.	3691.	4369.	5107.	5909.	6780.
563	1848.	2046.	2573.	2901.	3255.	3639.	4052.
564	953.	980.	1050.	1142.	1241.	1347.	1461.
565	511.	597.	825.	974.	1136.	1312.	1503.
566	151.	155.	167.	237.	314.	399.	491.
572	61.	79.	127.	295.	479.	681.	902.
573	2535.	2693.	3112.	3658.	4250.	4894.	5593.

O D ZONE	1973	1975	1980	1985	1990	1995	2000
574	3955.	4046.	4282.	4532.	4796.	5076.	5371.
575	1430.	1555.	1887.	2105.	2342.	2597.	2872.
578	96.	110.	142.	199.	261.	330.	404.
579	207.	318.	616.	923.	1260.	1629.	2032.
TOTAL	475837	496272	550116	611583	677909	749398	826437

APPENDIX L

Supplemental Budget for Solid Waste Management System, Kansas City, Mo., 1973-74

POSSIBLE PROGRAM EXPANSIONS

SUPPLEMENTAL BUDGET

1973-74

Account 1-40602

Ref. No.	Status	Program		Est. First Year Cost
I		Change White Goods Collection Service		
	C.	1. Service Provided by Contractors in all city contract zones		$3,931
	A.	2. Provide staff and equipment to maintain service in accordance with present demands		$23,573
	C.	3. Provide the service to all dwelling units within the city		$36,000
II	C.	Trial newspaper collection for recycling		$15,987
III	B.	Increase number of bags per package from 30 to 40		$205,200
IV	B.	Mayor's Environmental Seasonal Safety Campaign		$16,946
V		Expand refuse service to include additional dwelling units		
	B.	1. To include Public Housing in buildings housing six or more dwelling units	$ 40,554	$40,554
	B.	2. To include mobile home Parks	33,625	$74,179
	B.	3. To include co-operatives and condominiums	24,582	$98,761
	B.	4. To include buildings housing seven, eight and nine dwelling units	415,800	$514,561
	B.	5. To include buildings housing ten and over dwelling units	520,000	$1,034,561
VI	B.	Industrial Solid Wastes Co-ordinator		$17,720
VII	B.	Coupon system for bag distribution		$201,630* $104,819 $306,449

Legend
A. Included in basic budget
B. Submitted as supplemental budget
C. Held as a reserve program

*Non-recurring cost

Possible Program Expansions
1972-73 Fiscal Year
40602 - Refuse Collection

Status		Accounts A-C	Account E	Totals
B	Accelerate refuse Fleet Depreciation	$ 53,352	--	$ 53,352
B	Expand Refuse Collection Service to Collect All Refuse at the House	997,459	$ 8,520	1,005,979

A = Included in basic budget

B = Included as a supplemental program

C = Held as a reserve program

* = Non-Recurring Costs

APPENDIX M

Expenditures for Street Cleaning Under Lease Agreement Kansas City, Mo., October 1, 1972 to April 30, 1973

Since the program involves two phases (1) the sweeping, and (2) the loading, hauling, and disposing of the sweepings, the following cost breakdown is given in those two parts.

SWEEPING	
Lease - Maintenance of Equipment	$116,008
Miscellaneous Costs (includes costs of equipment damage due to accident, operator errors, vandalism, etc.)	8,217
Fuel Costs	4,800
Broom Replacement	7,185
Tire Repair	7,030
Total Cost for Rental Fleet	$143,240
Salaries for Operation of Sweepers (Of which approximately $70,000 is from the E.E.A. Program)	150,000
Total Cost for Seven Months of Machine Sweeping	$293,240
PICKUP & DISPOSAL OF MACHINE SWEEPING	
Total Cost (includes costs of equipment, fuel, labor, etc.)	$ 98,253
Total Cost for Entire Seven Months Operation	$381,493

μσ917